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ABSTRACT

This paper describes a ten-week, part-time inservice training course for teachers of severely and profoundly retarded children and an evaluation of the course's effects on teachers' classroom behavior. Five weeks focused on teaching methods, primarily behavior modification and social learning approaches; and five weeks focused on the curriculum content, including verbal behavior and problem solving, plus methods to organize the class and train other staff. Training sessions used lectures, videotape models, role playing, and discussions of interventions with individual children by each teacher. Evaluation of this course comes to the conclusion that such a ten-session, practically-oriented workshop course can change the classroom behavior of teachers in a positive way. (Authors/JD)

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Evaluation of An Inservice Training Course for Teachers of Children in Special Care Units of ESN(S) Schools.

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ABSTRACT

The paper describes a 10-week, part-time inservice training course for 15 teachers of severely and profoundly retarded children, and an evaluation of the course's effects on the teachers' classroom behavior. Five weeks focused on teaching methods, primarily behavior modification and social learning approaches; and five weeks focused on the curriculum content, including verbal behavior, play, and problem solving; plus methods to organize the class and train other staff. The training sessions utilized lectures, videotape models, role playing, and discussions of interventions with individual children by each teacher. In addition, half the teachers' classrooms were visited by course staff who systematically observed teacher and child behavior and gave feedback and suggestions. The other teachers were observed once following the course.

Observational data collected 5 or 6 times during and following the course for each Visited teacher showed overall increases in targeted teaching behaviors, although only some of the behaviors changed. They increased their frequency of working with individual children, but produced no significant overall changes in child behavior during the course. There were no major differences between Visited and Not-visited teachers, except that self-reports of projects undertaken marginally favored Visited teachers. Mid-course and post-course questionnaires showed that teachers liked the course and felt they changed their behavior positively.

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Evaluation of An Inservice Training Course for Teachers of Children in Special Care Units of ESN(S) Schools.

1. Introduction

Over the last decade there has been increasing concern with the failure of attempts to implement new techniques in classroom situations. Attempts to encourage teachers to use techniques have been made through initial teacher training, in-service training courses and dissemination through professional and specialist literature. The need for in-service training is particularly acute in areas in which there has been a demonstration of the value of new techniques at the research level or where teaching techniques are changing rapidly. One such area involves the use of behaviour modification techniques and the general evolution of improved content and methods of working with severely mentally handicapped children (Kiernan, 1974; Tizard, 1974).

This report describes an in-service training course run in conjunction with the Inner London Education Authority for teachers working in schools for the Severely Educationally Subnormal (ESN(S)) and the evaluation which accompanied the course.

In the course, methods of working with the severely mentally handicapped derived from research studies using behaviour modification and related techniques were discussed. In the second half of the course attention turned to 'curriculum content', target behaviours or objectives which might be aimed for with the severely mentally handicapped.

Methods of training teachers: The course was designed to benefit from recent research on teacher training. Research on these methods was virtually nonexistent until the mid-1960's. At that point, an influx of Government funding in the United States stimulated scores of

good studies on the subject. Recently the rate of activity has slowed considerably.

The research has been based explicitly or implicity on a behaviouristic model of training. The skills trained have been observable and measurable, and the training methods have been structured reinforcement and modelling.

The methods have been shown to produce rapid skill acquisition when attention is paid to important parameters. Reinforcement (often called feedback) is effective when made contingent on specific behaviours rather than global performance (Brooks,1967; McDonald & Allen, 1967; Ryan, 1966; Tuckman,McCall & Hyman,1969). The feedback should come from a supervisor, peer, or trained observer rather than from self-observation (Morse,Kysilka & Davis,1970; Tuckman et al., 1969) unless the behaviour is easily discriminable or the trainee is given pre-training in discriminating it (Brooks,1967; Gelford, Elton & Harman,1972; Thomas,1971). Reinforcement is more effective if the trainer can also prompt the behaviour (McDonald & Allen,1967), especially using a miniature remote receiver ("bug in the ear") which permits immediate reinforcement as well as prompting (Bailey & Wehr , 1971; Holmberg, Thomson & Baer, 1972; Spaulding, 1971).

Modelling based on the work of Bandura (Bandura & Walters,1963), has been widely tested and supported as a teacher training method (Berliner, 1969; Claus,1968; Koran,1970; Koran Snow & McDonald,1971; Lange, 1971; Orme, McDonald & Allen,1966; White,1972). Generally a live model is not necessary; videotape, film, audiotape and written models can be equally effective for many skills. There is evidence that trainers should continually cue trainees on the specific behaviour to watch as they are demonstrated (Claus,1968), and that they should present only models of desired behaviour rather than both desired and undesired, even when they clearly label the bad (Berliner,1969).

Microteaching is 'a teaching situation scaled down in terms of time, number of students, number and specificity of teaching skills focussed on, and offering immediate feedback of some form' (Cooper & Allen, 1970). In addition modelling is usually used in presenting the skill initially. This miniaturised teaching practice method has become popular in the last ten years and has shown the same positive effects as the reinforcement and modelling methods on which it is based (see Cooper & Allen, 1970 and Peck & Tucker, 1973 for reviews). Other packages consisting of behavioural methods have also proven effective (Spaulding, 1971; Wetzel, 1970).

Instructions are part of almost all training methods, although they show only mixed results when used alone (Clark & Macrae, 1976; Clark, Macrae, Ida & Smith, 1973; Koran, 1970; McDonald & Allen, 1967; Millett, 1969; Orme et al., 1966; Rule, 1972; Young, 1967). Hall (1971) and Zimmerman & Zimmerman (1971) used classroom instruction methods and assigned projects to be done in the teacher's home rooms, but their only assessment of results was by means of the teacher's reports of pupil behaviour. Sandefur (1970) reported on an experimental programme in which the trainees received intensive teaching practice almost to the exclusion of traditional instruction. The experimental trainees performed better in later classroom teaching than traditionally trained teachers; but the latter scored somewhat higher on written tests.

A remaining critical question about training is the extent to which target skills generalise to the teachers' classroom behaviour. If there is no generalisation, then the training is not justified. Reports on early training studies often included informal comments that the experimenters doubted that changes generalised to non-monitored classroom behaviour. The programmes that showed change in the classroom usually contained explicit or implicit contingencies on teacher performance (e. g. Lange, 1971; Koran et al, 1971). Modelling produced changes that were short lived (Holmberg et al., 1972). Brown, Montgomery, and Barclay (1969) showed that gains disappeared

when the trainer withdrew attention from the teacher, but could be reinstated by restoring attention. Saudargas (1972) showed that reducing the criterion rate for performing trained skills caused a reduction to the new criterion rate almost immediately. Using micro-teaching, which is similar to the teacher's classroom situation, Allen and Fortune (1966) found generalisation to home classrooms. However, a later study by Copeland and Doyle (1973) using a control group for comparison, found no significant differences. Performance may drop off for a skill even from one lesson to another (Berliner, 1969).

The only method that has been shown reliably to change behaviour in the classroom is to train the behaviour there. Hopkins and Conrad (1975), Spaulding (1971) and Wetzel (1970) used effective training packages and required performances of the skills in the classroom, thus assuring generalisation. Many of the studies discussed earlier were also classroom-based. We are not aware of any non-classroom based training procedure that has demonstrated behaviour change in the classroom situation.

Only a few training studies (Cooper et al., 1970; Hall, Panyan, Rabon, & Broden, 1968; McDonald & Allen, 1967; McGraw, 1966; Spaulding, 1971; but see DeKing, 1971) have demonstrated changes in the children's behaviour as a result of the new teacher behaviour. Rosenshine's (1971) review showed that the relationship between teacher behaviour and child behaviour is not well validated. In view of these mixed findings, we feel that teacher training studies should include measures of relevant child behaviour to validate the results of training.

The course design reflected the findings from the literature reviewed above. Emphasis was placed on structured reinforcement and modelling techniques, with feedback on the teacher's behaviour provided to them in weekly discussion groups and, for half of the teachers, in visits to their classrooms. Modelling through video-tape and written models was provided both in presentations and discussions and live in discussions and during visits.

Generalisation of skills to the classroom situation was assessed by direct observation of teachers and children in the classroom and by teachers' reports of changes in their behaviour and records of changes in the behaviour of the children. The direct measurement of changes in teacher and child behaviour in the classroom was possible only because of the high level of cooperation of the teachers. It represents an apparently unique feature in comparison with published studies.

The inclusion of the variable of visiting or not-visiting teachers in their home classrooms provides an assessment of a factor with substantial economic implications. If it can be shown that visiting significantly affects classroom behaviour, involving as it does added feedback and modelling, then budgeting for such visits would have to be allowed in course costings. If, on the other hand, no differences were to emerge then a much cheaper pattern would be possible.

The course represented an attempt to provide a model for in-service training for teachers in the United Kingdom. It was designed to fit within the framework of potential resources available. Most Local Authorities have Teachers Centres in which courses may be run and can request funding for such courses. Many Local Authorities have Special Schools Advisers who may themselves mount courses or bring in extra help to run such ventures. There seems to be no clear reasons why classroom teachers with adequate background should not themselves run courses for other teachers providing practical difficulties of classroom release can be overcome. Clinical Psychologists, employed by Area Health Authorities or exceptionally Social Services Departments may have the necessary skills. Educational Psychologists may possess the skills to run courses, although prior work with severely handicapped children is, in our experience, a pre-requisite for adequate course leadership.

2. Description of Course

The course resulted from an approach by the Thomas Coram Research Unit (CK,CS) to the Inner London Education Authority Inspector of Special Schools. The course was welcomed as part of a general programme of in-service training for teachers in ESN(S) schools in the area.

Attention in the course was focussed on the so-called "Special Care" classes. These classes are usually considered as containing the least able children in the school. The children maybe multiply handicapped, unable to walk, and possibly unable to control other limbs and head, unable to use speech or other forms of communication and very limited in play behaviour and learning skills. The other main 'type' of special care child is completely able physically. He may indeed be called 'hyperactive'. His behaviour is typically difficult to control, he is hard to teach and shows a failure to develop speech and to learn spontaneously. Both groups show a general failure to acquire self-help skills although this is less the case with the physically capable children.

The Special Care child has been the particular interest of research in the TCRU for several years. In addition it seems to be generally agreed that these children are the most difficult to teach given traditional teaching skills. This group is certainly the one for whom most help is requested by teachers.

Information on the Course in the form of a brief outline (Appendix A) was distributed to all 18 ESN(S) schools in the ILEA through the usual ILEA channels. The team running the course felt that no more than five teachers could be accomodated in each of three discussion groups within the course. As a consequence only fifteen schools were invited to join the course each sending one teacher. There are clear arguments in favour of selecting two or more teachers from each school. These largely concern the possibility for teachers to provide mutual support and help in the school during the course. However it was felt that the present course should be extended to as many schools as possible even at risk of lowering the effectiveness of the course.

Aims of the Course

The aims of the Course were as follows:-

1. To inform teachers about methods of teaching and the specification of objectives and target behaviours.

2. To train teachers in the skills involved in applying these approaches.

3. To discuss and agree with teachers programmes using the approaches with children in their classrooms.

4. To monitor the teachers use of these programmes through classroom visits in the case of half of the teachers and through weekly discussion of experience and problems in the case of all teachers.

5. To provide modelling of techniques and feedback on the use of techniques in classroom visits.

6. To introduce and discuss ideas on content of teaching.

7. To encourage teachers to use new content in agreed programmes.

8. To change the behaviour of target children in the teachers' classrooms.

9. To devise and evaluate a Course for Teachers in Special Care Classes.

The course consisted of ten weekly sessions, six in the latter half of the Autumn term and four in the beginning of the Easter term. Each session was divided into two parts. The first, from 2.00 to 2.45 or 3.00pm comprised a Presentation of a topic through lecture and, at times, video examples, slides and transparencies. The second hour to hour and a half comprised Discussion in three groups. Each group involved five teachers and two course tutors. The session normally finished between 4.00 and 4.15pm.

Sessions were followed by de-briefing meetings the day following the session in which tutors discussed the Presentation and Discussion groups. Seven planning meetings were also held for course tutors.

The content of Presentations was as follows:-

1. Approach to the Teaching of the Special Care Child. Initially the course tutors introduced themselves and the aims of the course were described. The course was presented as a means whereby methods developed in research contexts could be described and teachers given practice in their use. Emphasis was placed on the need for teachers to participate in the course sessions and in their own classrooms as well as by feeding back to the tutors their feelings about the course. It was emphasised that although the methods to be discussed were well tried the style of the course was an experinent. The timetable of the course was distributed. Teachers were asked to introduce themselves and to say where they taught and what type of class they taught in. This information was noted by tutors and on the basis of it teachers were divided into the Visited and Non-Visited groups. An attempt was made to balance groups in terms of type of class on mobility, communication and amount of help available and amount of experience of the teacher as far as this could be judged. Since visiting tutors were to use public transport an attempt was made to put teachers in more accessible schools in the Visited group.

Further information of the same type was gathered more formally later in the course.

The presentation involved a discussion of the basic approach. It was argued that the special care child is in need of care and education. Since the special care child differs from the normal child in not having skills, like play or imitation skills, through which he can learn about the environment, it is necessary for the teacher to be able to assess

necessary skills and in teaching them. Specific points were amplified with examples from previous projects in which the tutorial team had been involved. The examples were illustrated with colour slides. Education for the special care child consists therefore of direct teaching, if necessary on a one to one basis and providing a structured classroom environment in which taught skills can be generalised and in which spontaneously developing skills and tendencies can be elicited, rewarded and developed. In this framework assessment becomes a matter of getting an overview which will allow some targets for teaching to be set up, through the use of an instrument like the Gunzburg PPAC. The second level of assessment involves a close examination of the child's behaviour in terms of Antecedent events Behaviour and Consequent events (the ABC analysis). This type of assessment must be done with the child in the normal environment. The importance of other staff in classrooms was emphasised both from the viewpoint of changing the child's behaviour and from the viewpoint of motivating the staff to work toward common goals. The importance of involving staff in decisions as a means of arriving at realistic goals and motivating them to work toward such a goal was emphasised.

In the Discussion section there was further comment on assessment. As an assignment for the following week teachers were asked to complete one or two amplified Gunzburg PPAC's with other staff in the classroom (see Appendix B). In addition one behaviour was to be observed on an ABC basis for one week. This behaviour was selected in in the Dismussion and the method of recording decided, e.g. time or event recording. The nature and completion of Self-Report Forms was described. (Appendix
It was emphasised that projects could be selected from the full range of behaviour of any child in the classroom but that these would not be settled until the following week.

Initial visits were arranged to the Visited group. A problem

emerged at this stage was that two teachers were in charge of Special Care classes but did not themselves teach in these classrooms. One of these teachers felt that she could not even run programmes in the Special Care class. She was consequently put in the Non-Visited group. The other teacher remained in the Visited group.

All 15 teachers attended the first meeting. A book on 'Operant Training Techniques' (Kiernan & Riddick, 1973) was distributed at the end of the Presentation. This text covered material in Presentations 1 to3.

2. Building up Behaviour. The Presentation in this session described the use of rewards as positive reinforcers. An emphasis was placed on seeing reinforcement as a communication of approval to the child who did not understand speech and who needed clear and frequent feedback which followed acceptable behaviour immediately in order to identify what the adult actually approved of. Several video examples of diverse types of reward and of the use of positive reinforcement were shown. Special attention was paid to the difficult-to-reward child since in previous experience with teachers one frequent point made had been that it is difficult to find rewards for many special care children. In this context the need to explore very carefully potential rewards and to consider programmes aimed at developing rewards was emphasised. A schedule concerned with identification of rewards through questioning and Premack procedures and a relevant APT section were discussed and distributed.*

In the discussion section each teacher was set up with a programme ranging from observation and reward identification to active teaching. All teachers attended Session 2.

* See Page 12 for fuller discussion of APT.

3. Getting Rid of Behaviour. This session concentrated on time-out, punishment training and escape training. The ethical problems in the use of punishment and escape training were discussed including an example where punishment training was not used and the child subsequently died as a consequence of behaviour which could possibly have been eliminated. The importance of the development of responses which would compete with unacceptable behaviour was emphasised in terms of a principle of matching such that for every response to be eliminated it is necessary to teach a response by reward training. The need to keep the child's experience of the classroom emotionally positive was stressed. It was suggested that a balance of at least 80 per cent positive reinforcement to 20 per cent negative reinforcement is necessary. Videotape examples of time-out, the use of 'no' in punishment in conjunction with reward training for competing responses and escape training were presented and discussed.

Progress of programmes and modifications to programmes were covered in the Discussion section.

Three teachers failed to attend. All were in the Not-Visited group.

4. Analysis of Behaviour for Teaching. The Presentation was concerned with goal selection and task analysis. A series of key questions was suggested for goal setting. These concerned blocks to education or development such as self-destructive behaviour, the child's possession of means of social contact, communication, basic inspection and sensori-motor skills and preferences for experiences which could lead to their use as rewards. On the social side the need to consider the child in his school and home context and to consult other staff and parents on their needs vis-a-vis the child's behaviour was emphasised.

It was argued that, given the overall picture of the child, priorities within a programme could be established.

The breakdown of individual priorities or targets into steps suitable for the child was discussed in context of examples from other projects.

Two types of material were discused. One was a teaching oriented assessment Battery (The Behaviour Assessment Battery, Kiernan & Jones, 1977). This battery aims to suggest suitable starting points for teaching. The second type of material, the Analysis of Programmes for Teaching (APT) series (Kiernan, 1975) aims to present more background material from normal development and to suggest a strategy for analysis of teaching needs and a way of approaching. The series relies on written models to carry suggestions. Neither approach involves recipes for programmes. The impossibility of use of recipes in teaching was stressed in discussion. APT sections 1 and 2 were distributed. These covered the general approach and shaping of attention. (Appendix L)

5. Some Teaching Techniques. The use of prompting and modelling (imitation) was discussed. Discussion of prompting emphasised the use and value of backward chaining and emphasised that forward chaining could only be used in conjunction with prompting of succeeding elements in chains. Video examples were shown and prompt dependence discussed. It was argued that models for teaching through imitation should be simple and clearly discriminated. Programmes to teach the child to imitate were illustrated. The use of gross motor imitation as the starting point for generalised imitation, including verbal imitation, was argued on grounds of ease of prompting. The ease with which responses to be used as signs in manual communication could be prompted and taught was discussed and illustrated.

Discussion of programmes followed. All teachers attended Session 5. APT sections were distributed to cover material for Session 6.

6. Free Activity: Play and Self-Stimulation. In the Presentation it was argued that play could be seen as a strategy which allowed the child to find about his environment. The possibility of teaching the child to play was discussed. Several video examples showing children interacting with objects in a non-appropriate way and then being taught appropriate responses were presented and discussed. These included examples of pressing squeaky toys, block building and turning handles on musical boxes. Self-stimulative behaviour was seen as usually a reaction to a deficient environment or as very enjoyable but self-directed activity. Possible communicative functions were not dismissed but seen as the subject of ABC analysis if suspected. The need to and difficulty of competing out or otherwise getting rid of self-stimulative behaviour was discussed and illustrated by video examples.

Ratings of Presentation and Discussion (Appendix G) were distribued and collected in after completion. The Discussion section continued coverage and extension of programmes. Two teachers, one in the Visited group and one in the Not-Visited group, did not attend this session. APT sections were distributed to cover topics in Session 7.

7. Object Concept and Discrimination. The development of inspection, tracking skills and object permanence were discussed in relation to APT sections and to a video example of a tracking programme. The need to teach the basic concept underlying discrimination, that cues signify different outcomes, was emphasised. A possible progression from colour based discriminations to positional, shape and to number was illustrated. The need to consider the strategy being used by the child in trying to solve a problem or obtain reward was emphasised. Methods of analysing strategies from session records were discussed and illustrated, with an example using overhead projector and video. The point that severely

handicapped children may naturally meet a high probability of failure in problem solving and hence be happy with a 50 per cent success rate in a conventional discrimination problem was discussed as a possible reason for failure to show progress in these situations. Methods of dealing with this were discussed. Further relevant APT materials were distributed.

Discussions continued on individual programmes but there were several teachers who asked for time to discuss other children or broader aspects of classroom organisation. In a tutors meeting it was suggested that these aspects could be covered in the 1.30 - 2.00pm period. This tactic was moderately successful but of limited value because teachers often could not get to the Centre by 1.30pm or wanted to relax after working and travelling, or tutorial staff were pressed for time.

Fifteen teachers attended Session 7. APT sections covering Session 8 were distributed.

8. Relationships and Communication. The Presentation in this session covered the development of very simple social reactions including the development of responsiveness to the adult as an intrinsic reward and as a source of reward, eye contact and simple communication of need by basic vocalisation and by physical manipulation of the adult. The Presentation was illustrated with colour slides of specific programmes.

Discussion of individual projects continued. Fourteen teachers attended Session 8.

Two special discussions of methods of 'passing on' skills to Nursery Nurses or General Duty Assistants were added following Sessions 8 and 9. A Training Programme in Operant Techniques (Riddick & Kiernan, 1973) was distributed and discussed as it related to this issue. The discussion ranged over inter-professional relations and problems of teaching other staff.

9. Verbal Communication. The Presentation covered assessment of verbal communication. It was pointed out that observation of the child and discussion with parents or others who saw the child in different contexts could reveal a great deal more about thechild's ability to communicate than formal testing. This point was illustrated by data from another project. The BAB Communication Questionnaire was suggested as one means of approaching an analysis of communication. The necessity of looking at the child's cognitive abilities as well as comprehension and expression by non-verbal and verbal means was emphasised. The assessment of speech sound production within the classroom was discussed. The place of the ability to imitate and programmes to teach receptive and expressive vocabulary and linguistic skills were discussed and illustrated. The need for reinforcement of spontaneous production was seen as the touchstone of communication and the need for generalisation and the creation of mechanisms whereby generalisation could be ensured was covered.

Two additional topics, the scheduling of positive reinforcement and the use of restitution techniques were briefly discussed. These topics had been de-emphasised or missed out in earlier presentations but it was felt they needed coverage. Both topics were illustrated with examples from other projects. BAB and APT materials were distributed. Fifteen teachers attended Session 9.

10. Manual Communication and Other Alternatives to Speech. The concept of Total Communication was introduced and discussed. An outline of the main characteristics of British Sign Language, including the Makaton Vocabulary, and of Paget-Gorman was presented. The concept based nature of both systems was emphasised. It was pointed out that there is no published evidence to suggest that learning to communicate manually impedes acquisition of speech and that there is some slight evidence which suggests that if may actually potentiate speech development. The Bliss and Rebus systems were introduced and discussed.

The complexity of many Bliss 'words' and the 'phonetic' basis of Rebus symbols was discussed and illustrated. It was pointed out for example that Rebus 'all' is a symbol ⊕, Rebus 'wall' is a symbol 'w'⊕'. The development and use of other prosthetic devices to aid communication was discussed.

Several post evaluation sheets were distributed with stamped addressed envelopes and the request that they be returned quickly. 15 teachers attended Session 10.

Organisation and Running of Discussion Sessions

Following each presentation the teachers split into three groups of five for discussions. Two tutors were attached to each group. The same groups were retained with the same tutors throughout the course.

There were several objectives in breaking down the total group into sub-groups for discussion. The central objective was to provide an opportunity for discussion of individual teachers' programmes. A minimum period of 15 minutes per teacher was felt necessary. This would not have been possible in the total group and often proved difficult in the Discussion groups. The provision of time for discussion placed clear expectations for active participation in the course sessions and in the development of classroom programmes. Although the disapproval of other teachers for non-participation was never used by the tutors in the course it emerged on a number of occasions in group discussions. On the other hand the group approval for presentation of successful course-related programmes was a clear factor which was systematically fostered where necessary by tutorial staff although the spontaneous reactions of other teachers could usually be relied on. Much of the effectiveness of this factor appeared to stem from the fact that teachers became familiar with target children over the weeks and identified closely with the efforts of teachers to change their behaviour. Self-Report forms were used as a basis of feedback, especially in one discussion group. Suggestions about programmes and programme changes were made

by both tutors and other teachers. Modelling effects whereby a teacher adopted a type of solution described as having been successful by the tutor or by another teacher were common. Contributions from teachers were encouraged by course tutors who used the suggestions as a basis for modelling appropriate programme formulation in the first instance but increasingly could rely on appropriate formulation from teachers. Role playing was used in all groups to illustrate techniques and particular problems and programmes.

3. Overall Design of Evaluation

The overall approach to evaluation was to gather several related lines of information in order to build up a picture of the impact of the Course. As a result, Pre-Course Measures of attitudes and of constitution of classes were collected. Throughout the course, ratings and observations were made. Classroom observation was combined with advice and guidance for seven Visited teachers but not for the other eight. Classroom performance of the Not-Visited group was assessed in a single visit at the end of the Course.

Post-Course measures of rating of sessions, visits and felt degree of change were taken from all teachers.

(i) Pre-Course Measures. During the first session all teachers were asked to describe their classrooms and experience in brief outline. On the basis of this information the Visited and Not-Visited groups were constituted. Teachers were matched on a range of characteristics and then assigned to Visited or Not-Visited groups on the basis of accessibility by public transport. Separation of the groups in this way did not appear to bias any of the matching variables. Basic data was checked subsequently (see Appendix C). Groups were matched in terms of years of teaching (Visited $\bar{x}$ 10.3, S.D. 10.8; Not-Visited $\bar{x}$ 10.1, S.D. 6.7). The Not-Visited group had longer than average in Special Schools (Not-Visited $\bar{x}$ 6.3 years, S.D. 3.1 years, Visited $\bar{x}$ 2.9 years, S.D. 2.2 years). Visited group teachers tended to have slightly smaller classes ($\bar{x}$ 8.5, Not-Visited $\bar{x}$ 10.6) . The visited classes had a higher proportion of ambulant children (0.63 as opposed to 0.15), a smaller proportion of children who understood speech (Visited 0.42, Not Visited 0.50), but a higher proportion of children using some speech (Visited 0.17, Not-Visited 0.08).

None of the differences between Visited and Not-Visited groups were significant on the measures described but clearly the groups were

not particularly well matched. Overall the Visited group has less experience in Special Schools, smaller classes with more ambulant children who also tended to use speech more.

All teachers were asked to complete three checklists immediately before the second session. This data was then stored in sealed envelopes until the end of the course,

(a) FIRO B, The Fundamental Interpersonal Relations Oreintation - Behaviour aims to measure how an indiviudal acts in interpersonal situations and to predict interaction between people ((Appendix D), The checklist assesses the behaviour an individual expresses toward others in terms of Inclusion (the need to establish and maintain interaction and association), Control (relationships as they involve control and power) and Affection (relationships of love and affection). The same three aspects are also assessed in terms of the behaviour the person wants others to express toward him. Consequently FIRO B gives six scales, Expressed and Wanted behaviour in the areas of Inclusion, Control and Affection. All scales score satisfactorily in terms of Guttman reproducibility and test-retest coefficients(

(b) Attitudes to Work. This 20 item checklist was devised bu Lodahl and Kedener (19) (Appendix E), Each item answered in terms of four alternatives, Strongly Agree to Strongly disagree. The maximum score possible is 80, High scores indicate a positive attitude toward work,

(c) Attitude to Change. The final checklist was devised for use with teachers by (Appendix F). It consists of nine items concerned with willingness and desire for change in the job setting. Each item is checked in terms of five alternatives, giving a maximum score of 45 denoting a highly positive attitude toward change.

(ii) Mid Course Evaluations. Five measures were taken regularly during the course. Two of these were observational measures. They were the Teacher Observation Checklist (Appendix H) which recorded teacher behaviour and the 'Child Behaviour Time Sample (Appendix I). which aimed to assess child behaviour Two further measures involved self-report. Teachers were asked to complete 'Self Report Forms '(Appendix J) to record what the did each week and also to keep records of individual teaching sessions. Following each weekly session tutors made assessments of the level of understanding of concepts which had been shown by teachers in Discussion on 'Tutor Assessment Forms' (Appendix K).

On one occasion Mid Course (after five sessions) teachers were asked to complete a 'Rating of Presentation and Discussion'(Appendix G). Presentation and Discussion sections were rated separately. Presentations were rated on relevance, interest, amount learned, ease of material, organisation, delivery including audibility, use of video material and length. Discussions were rated on relevance, interest, organisation and length. All replies were anonymous.

The overall design of course and evaluation employed multiple baselines. New techniques or material were introduced at predefined times in such a way that the effects of introduction could be measured through the various evaluation procedures employed.

Data were collected on classroom behaviour using two measures, the Teacher Observation Checklist and the Child Behaviour Time Sample. In the classroom visiting tutors took on the role of participant-observers (Krasner,1977). This role rather than the more traditional observer role was chosen for several reasons. A participant is less obtrusive than an observer; a participant can engage in activities that reinforce the teacher; and a participant is in an excellent position to provide

immediate and specific feedback to the teacher. This role represents a movement away from the myth of the existence of 'objective' value free observers. One aim of the training programme was to influence the teachers to acquire and perform new skills in this classroom. Since the presence of an observer in the classroom influences teachers, this influence was used by allowing him to engage in consulting and training activities. The participant role creates some problems for research . It is difficult for a participant to simultaneously interact and collect systematic observation data. In this study we were primarily interested in training, and so did not compromise the training for the research. If, during an observation session, the teacher asked the participant for information or feedback, he would interrupt formal observation and provide consultation (see below). In addition, the participants set aside time after the teacher's sessions with children to provide feedback, model appropriate skills, and assist the teacher in designing or modifying teaching programmes for the children.

The design of the evaluation permitted assessment of changes in teacher and child behaviour, It also provided the opportunity for further training in the classroom and uses the reactivity present when collecting observation data to influence teachers to employ skills taught in the workshop.

Extensive baseline data was not collected for any teachers. It would have been difficult to go into the schools before the workshop began because the course tutors did not have a prior relationship established with the schools and teachers tend to distrust 'researchers'. However, the first observation was considered to be a reasonable pre-test because there was no discussion of teaching techniques during the first session. Four of the six Visited teachers were observed before the second session. There is little reason to believe that the teacher's behaviour would change significantly during a baseline period without any intervention.

Conduct of Visits

The systematic observations were carried out in the teachers' classrooms, on the average of once every two weeks. Precautions were taken to prevent either of the two observers from visiting one teacher more consistently than another. Participant observers arrived at the schools at 9.30 am and started observing no later than 10.00am. Observation continued for the entire morning and through meal times if the children were fed in the classroom by the teacher. Observations were terminated by 1.0pm, whether or not lunchtime was over. Observers employed two measures during their classroom visits: a continuous Teacher Observation Checklist and a Child Behaviour Time Sample. Time for both of these measures was kept by a small cassette recorder. Time intervals for the checklists were 20 seconds for observing the teacher and 10 seconds to record. Every 15 minutes on the tape, approximately one minute was provided to observe and rate the time sample measure. The recorders were turned off if the teacher left the room or if they approached the participant observer for advice.

The checklist was adapted (Appendix H) from an earlier coding instrument designed to assess teacher behaviour in structured situations (Kiernan & Riddick, 1973). The 20 categories included Course Related behaviours, those which the course attempted to increase in frequency, and behaviours expected to decrease in frequency. Each behaviour category was strictly defined to minimise expectation bias or inter-observer drift (Kent & Foster, 1977). Using Cohen's Kappa (Kent & Foster, 1977), which removes agreements occuring by chance inter observer reliability was 0.72 and 0.62 during the week immediately prior to the course. During the course reliability was calculated four times at 0.57, 0.85, 0.83 and 0.85. The checklist was a valuable aid for participant observers in giving the teachers

feedback on their performance. It allowed teachers specific information on their behaviour at a glance.

INSERT TABLE 1 ABOUT HERE

The Child Behaviour Time Sample (Appendix I) was designed to assess how many children were working with the teacher, each subordinate staff member, or left unsupervised, as well as noting what each child was doing at that time. The five mutually exclusive behaviour categories were on-task, exploratory, disruptive, passive and self-stimulating. On a periodic cue from the tape recorder the observer would turn to the time sample form, observe the children working with the teacher and then write the number of children and tick the appropriate category for each child. He would then do the same for the children working with each assistant and then for those children left unsupervised. For example, during a one minute time sample period the teacher might be working with two children, one of whom is on-task while the other is passive. At the same time, an assitant has three children, all of whom are disruptive, and no children are unsupervised.

Reliabilities were calculated in two ways. Reliability on measures taken on children working with the teacher were, Number of children 0.97, On task 0.88, Exploratory 0.36, Passive 0.66, Self-Stimulation 1.00, Disruptive 0.10. Reliabilities for measures taken on children when working with the teacher or any other member of staff or unsupervised were, Number of children 0.97, On task 0.57, Exploratory 0.49, Passive 0.63, Self Stimulation 0.82, Disruptive 0.08.

The teacher Self-Report form (Appendix J) was designed to add consensual validity and to gather information not obtained in the systematic observations. Teachers were asked to report the number of target children, the behaviours being trained, the techniques being used, and the problems or progress they were having.

TABLE 1.

Teacher Observation Checklist Category Definitions

1. Stimulation
Unsystematic interaction with one or more children. This includes story telling, singing, playing, tickling, excercising, randomly presenting objects to the child, etc., Code when the observer can not discern a specific target behaviour being taught. Reliability 0.64

2. Manipulates Material
Teacher physically rearranges task to assist child. Not coded when teacher picks up dropped items. Reliability 0.00

3. Response Competition (Course-Related)
Prompting a response imcompatible with disruptive behaviour to control that behaviour. (Should include such things as over-correction (or retribution)). Reliability: Behaviour never occurred during checks.

4. Gains attention (Course-Related)
Teacher physically turns childs head to orient him/her to what is required (e.g. task object, demonstration of task, etc.) when child is looking elsewhere. Reliability 0.53

5. Verbal Prompt (Course Related)
A command or verbal specification to complete a correct response. Reliability 0.85.

6. Demonstration Prompt (Course Related)
Teacher demonstrates the desired task response, either fully or partially Reliability 0.63

7. Physical Prompt (Course Related)
Teacher touches the child to guide his/her motor response either fully or partially Reliability 0.66

8. Positive feedback
Teacher indicates to the child that he/she is making a correct response before it is completed. Reliability=0.67

9. Negative feedback
Teacher indicates to the child that he/she is making an incorrect response before it is completed. Reliability 0.71

10. Verbal Reinforcement (Course Related)
Verbal praise such as, "good boy" etc., initiated immediately following a correct response and prior to other forms of reinforcement. It may overlap with and continue after other forms of reinforcement, if delivered. Score incorrect if not delivered at the correct time. Reliability 0.79

11. Physical Reinforcement (Course Related)
Touching the child by hugging, tickling, kissing etc., to reward appropriate responses. Used alone it must immediately follow the response. Used in conjunction with verbal and material reinforcement it must be presented last. Score incorrect if not presented at right time. Reliability 0.67

12. Material Reinforcement (Course Related)
The stimulus, e.g. sweets, drinks, flashing lights, toys, etc., must be presented within 2-3 seconds following the child's response or the verbal reinforcement. Score incorrect if given too late or for incorrect response. Reliability 0.92

TABLE 1 CONT'D.

13. Physical Control
Teacher interrupts and terminates child's disruptive behaviour, e.g. self-mutilation, hitting, biting, throwing objects, by physically restraining him/her. Reliability 0.53

14. Verbal Control
Teacher interrupts and terminates child's disruptive behaviour using a verbal command or verbal punisher e.g. stop, No, etc., Reliability 0.63

15. Removes Attention (Course Related)
Teacher immediately withdraws his/her attention from child for disruptive respones. Reliability ' see Time-Out.

16. Removes Stimulus (Course Related)
Teacher removes task objects, toys, food etc., for disruptive responses. Reliability see Time-Out.

17. Removes child (Course Related)
Withdraws child from stimulus conditions for disruptive responses. Reliability see Time-Out.

18. Time-Out (Course Related)
Returns attention, stimulus, or child, within one minute or less after termination of the disruptive behaviour. Reliability for all time-out behaviours pooled 0.54

19. Group
Teacher working with 2 or more children in close proximity on similar tasks*

20. Individual
Teacher's attention focused solely on one child working on particual task*

* these categories are exhaustive of all child/teacher contact.

Overall reliability for all categories = 0.75

The fourth measure employed was the Tutor Assessment Form (Appendix K) After each weekly discussion group leaders rated their impression of the teachers understanding of prompting, reinforcement, time out, response competition and modelling each on a five point scale. This was done to measure whether understanding of course material preceeded or followed the use of the material in the teachers classrooms.

(iii) Post-Course Measures. During the last session of the course three rating sheets were distributed. One was the 'Rating of Presentation and Discussion' previously distributed after Session 5 and described above (see also Appendix G).

Two further rating sheets were completed at the end of the course. The first was 'Rating of Visits' through eight questions (Appendix L). Five asked whether various aspects of the work could have been carried out without visits, were helped by visits or could not have been accomplished without visits. Two further questions asked about possible disruptive effects of visits and the style of feedback on visits. The final question asked about effects of the attention focused on the classroom by the visits.

The final questionnaire 'Teachers Report of Changes' asked about ways in which the teachers felt that the course had affected their teaching in terms of methods, content, organisation and use of distributed materials (Appendix M).

4. Analysis of Results

Pre-Course Measures, evaluation taken during the course and Post-Course Measures will be described in sequence.

(i) Pre-Course Measures

(a) FIRO B. Mean scores on the six FIRO B scales are shown in Table 2. None of the differences between the Visited and Not Visited groups are significant as assessed by t tests.

	Expressed			Wanted		
	Inclusion	Control	Affection	Inclusion	Control	Affection
V	4.43	2.57	3.00	1.00	3.43	3.71
Not V	3.12	3.50	3.12	1.12	2.62	2.75

Table 2. Mean scores on FIRO B scales for Visited (V) and Not visited (Not V) groups.

Correlations between scores on the pooled FIRO B scales for Visited and Not Visited groups and the Attitudes to Change scales were non-significant with the exception of a positive correlation between Expressed Inclusion and Attitudes to Change ($r = 0.59$, $df=13$ $p<0.05$) and a negative correlation between Wanted Control and Attitude to Work ($r = 0.54$, $df=13$ $p<0.05$). In other terms teachers who express the need to include other people in their activities and try to get others to include them in theirs tend also to have a positive attitude to change. And teachers who want others to control and influence them tended, in this sample, to have less positive attitudes to work.

Two indices were derived from observation in classrooms. The first was the amount of Stimulation used by the teacher. The second was the composite index constituted of all teaching strategies discussed on the course, amount of Course-Related Behaviour.

Correlations between FIRO B scores and observation-based indices were computed for Visted and Not Visited groups separately and then together. None of the correlations reached an acceptable level of significance.

(b) Attitudes to Work. The range of scores for the Visited group on attitudes to Work was 50 to 60 ($\bar{x}$ = 54.43, SD = 3.99) and for the group Not Visited 51 to 77 ($\bar{x}$ = 62.50, SD = 11.96). The difference was not significant at an acceptable level ($t = 1.69$, $df = 13$, $p > 0.05$).

As already noted 'Attitudes to Work' correlated negatively with Wanted Control ($r = 0.54$). Other correlations were non-significant.

(c) Attitudes to Change Scores in the Visited group ranged from 21 to 41 ($\bar{x}$ = 30.28, SD = 6.47) and in the Not Visited group from 21 to 35 ($\bar{x}$ = 28.25, SD = 4.83). The t value relating to the differences was 0.69 ($df = 13$, $p > 0.05$). The correlation between Attitudes to Change and Attitudes to Work is non-significant ($r = 0.08$, $df = 13$, $p > 0.05$).

With the exception of the positive correlation between Attitudes to Change and Expressed Inclusion noted above none of the correlations with observation based or other factors was significant.

Conclusion

The results gained from pre-course measures were disappointing. With the exception of a positive correlation between Expressed Inclusion and Attitude to Change and a negative correlation between Wanted Control and Attitude to Work none of the relations investigated were significant. The failure to show correlations between Course outcome variables and Pre-Course Measures may be partially explained by the small numbers involved in correlations when Visited and Not-Visited groups are tested separately. Correlations which involve pooling of Visited and Not Visited groups may be lowered by pooling. Consequently, although these results show little, the possibility of the scales revealing relations can not be ruled out.

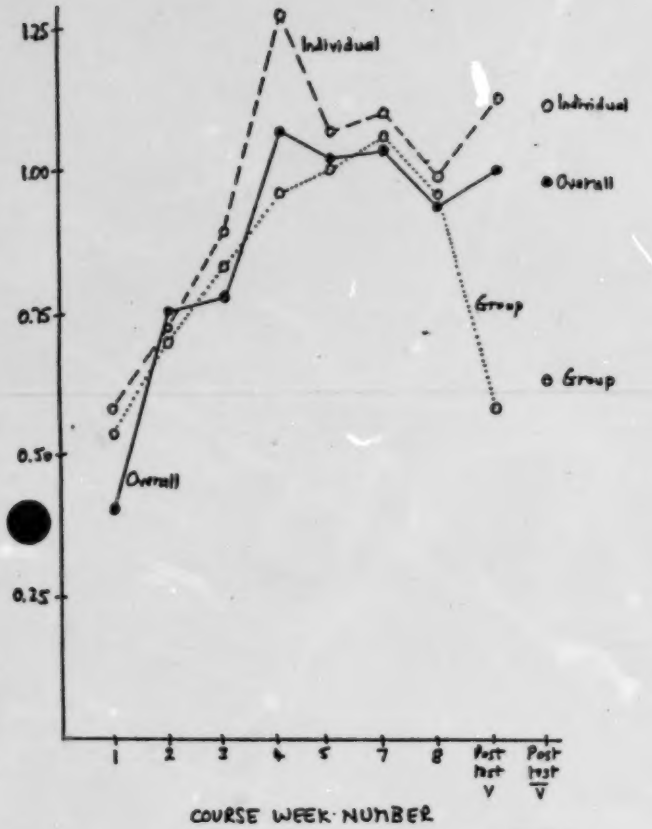
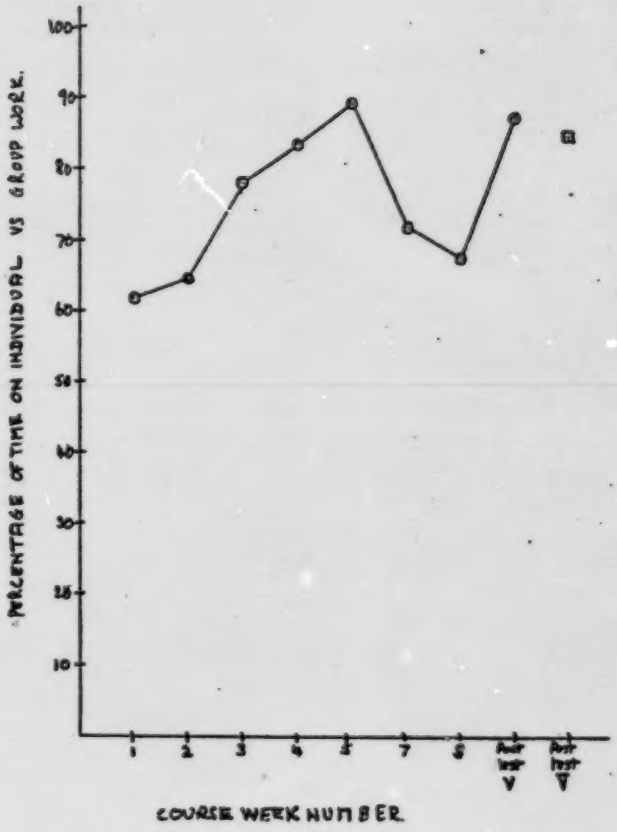


Figure 1



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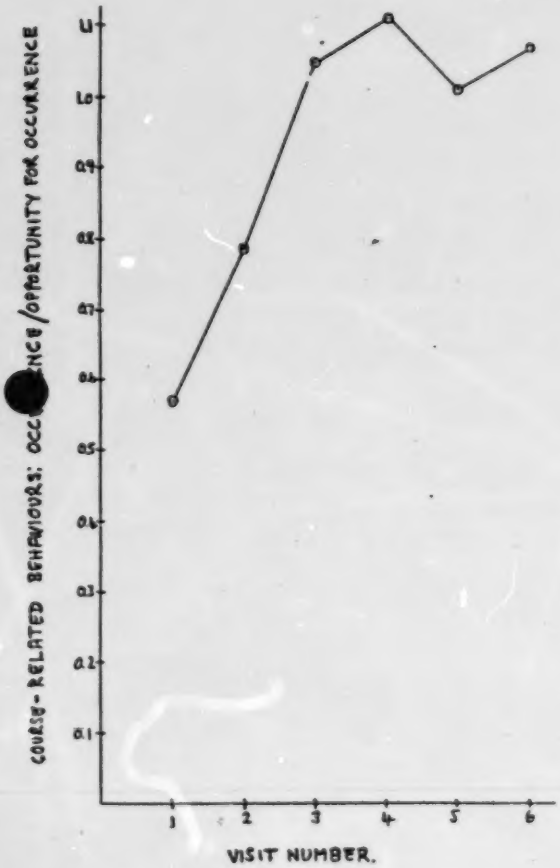

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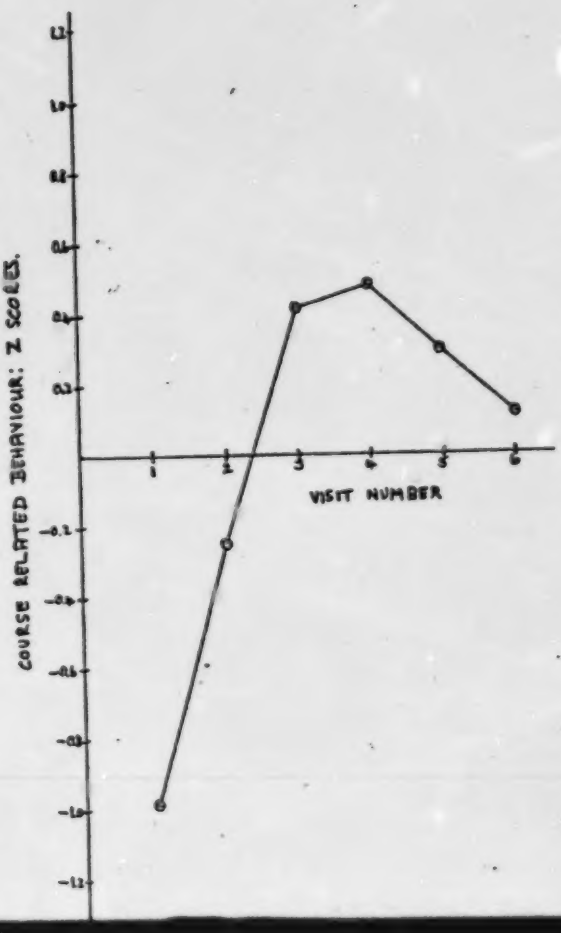


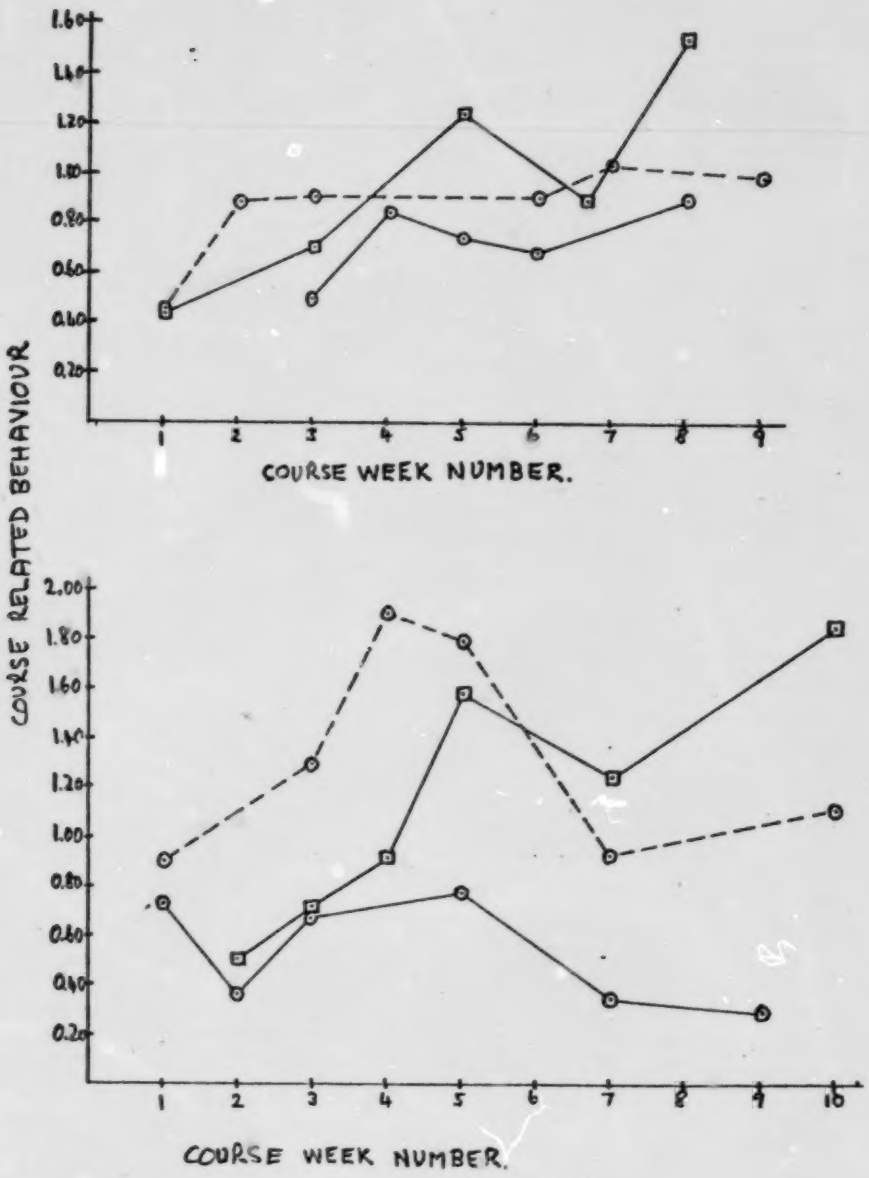

COURSE RELATED BEHAVIOUR
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
1 2 3 4 5 6 7 8 9
COURSE WEEK NUMBER.
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
1 2 3 4 5 6 7 8 9 10
COURSE WEEK NUMBER.

Figure 5.

(ii) Mid Course Evaluations.

(a) Teacher Observation Checklist The graph of total course related behaviour across weeks (see Fig 1) shows a steady increase from week one until week four. After the fourth week there is a slight decline, with a recovery on the post test. The pattern for overall course related behaviour closely resembles the graph of the ratio of teacher work time spent with individuals to that spent with groups (Fig.2). Due to this resemblance one could hypothesise that the rate of course related behaviour is a function of the number of children with whom the teacher is working and that the number of children with whom teachers worked at any one time had been affected directly by assigning individual pupil programmes to the teachers. This hypothesis is not supported since Figure 1 shows course-related behaviour performance to be comparable for group work and individual work.

Figure 3 shows course related behaviour plotted by visit number rather than according to week. Each point represents the mean of visits to all teachers in the Visited group. This graph shows a steady increase until observation four, followed by slight decline and a recovery on the post test. Z scores for all teachers were computed to assign equal weight to all teachers. Figure 4 shows these scores graphed according to the visit/observation number. Once again there is a steady increase but now only until observation 3 after which there is slow increase until week four and a slight decline through the post test.

Figure 5 shows the data for each individual visited teacher. With the exception of one teacher all show a sharp rise in course related behaviours during the first five weeks of the course (before the vacation). After the vacation 5 of the 6 teachers dropped on the Course Related Behaviour index, then 4 teachers recovered and increased their scores on the post test. This suggests that the four and a half week holiday itself or other events around that time adversely affected most teachers with regard to Course Related Behaviours.

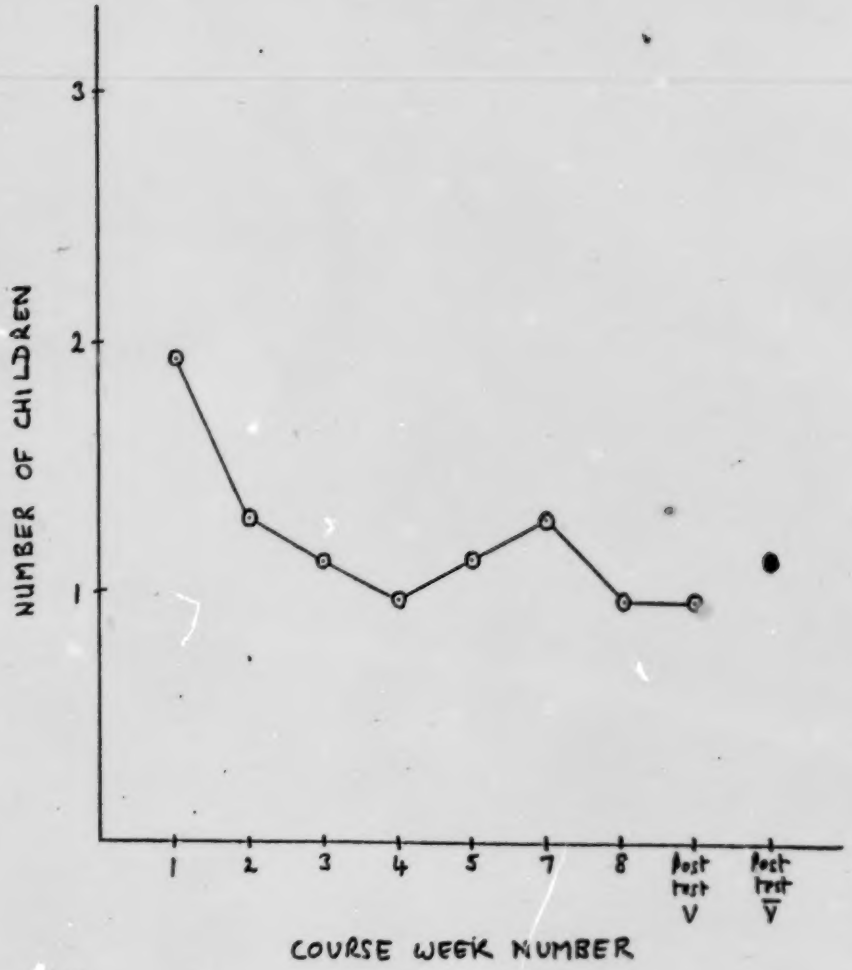


Figure 6

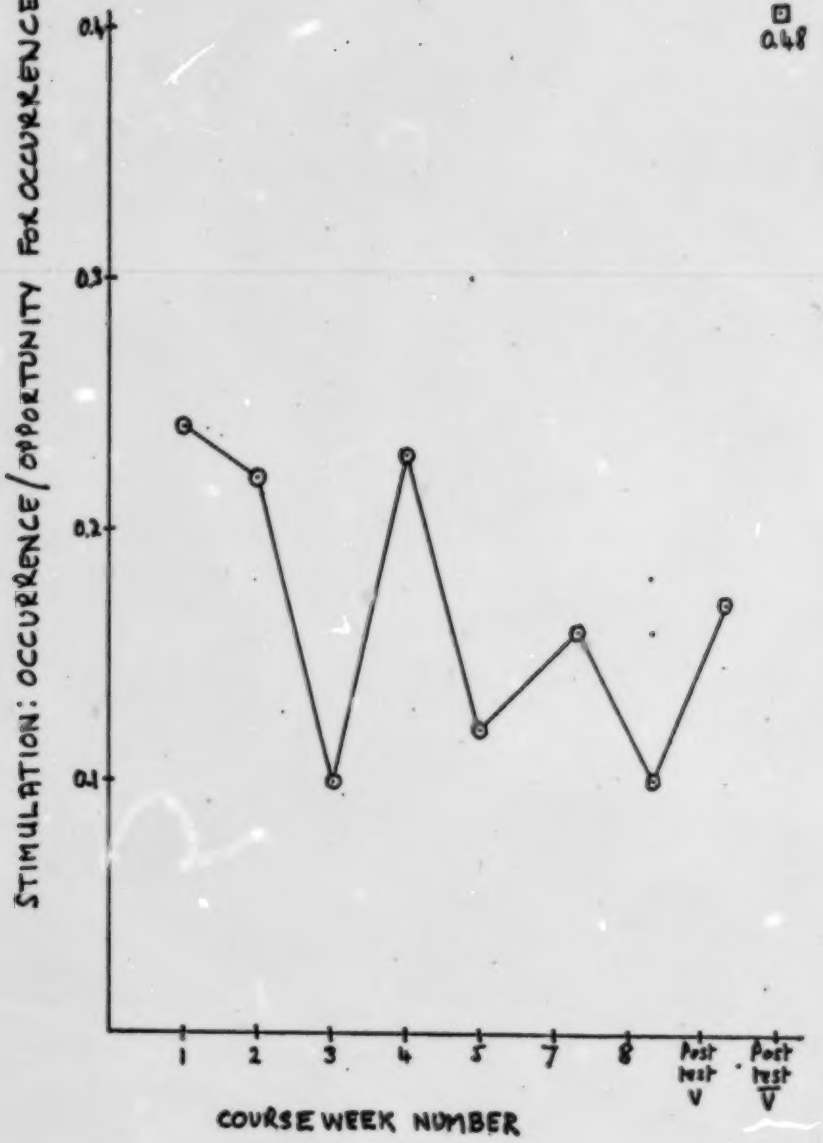


Figure 7.

Results relating specific course content to specific teacher behaviour

In this section we are testing the hypothesis that course sessions produce changes in the behaviours of teachers in relevant areas of teaching. After the time of introduction of various teaching techniques in the course, we can predict that changes in teacher behaviour should occur. We will look at the results for specific teacher behaviours to test these predictions.

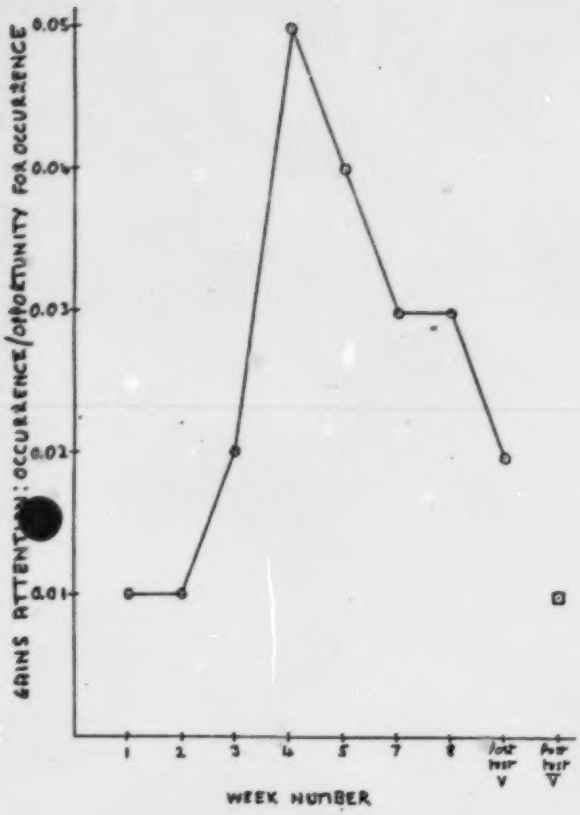
Working with Groups or Individuals.

Teachers were set up with programmes for training indivudal children in the second and third discussion groups. The results (see Figure 2) show a slight increase in work with the individuals after the second meeting, a larger increase after the third, and continued to increase to a high of almost 90 per cent on week five. The proportion of work with individuals then drops off on weeks seven and eight and recovers on the post test.

These results follow the results from the Child Behaviour Time Sample (Figure 6) which shows a large drop in the average number of children with whom the teacher works on week 2 and the same trends for the rest of the weeks. The prediction that teachers will work more with individual children is confirmed.

Stimulation

In the first session teachers were encouraged to use structured teaching situations for individual students. Specific teaching techniques were then taught in the following two sessions. Again in session five specific teaching techniques were taught. This would lead us to predict a decline in the teacher's use of stimulation, defined as unsystematic interation including singing, tickling, excercising, etc.. Figure 7 shows stimulation declining during the first three observations. There is a sharp return to its original level in the fourth observation. During the last three observations there is partial recovery to a level of lower than the initial observation, although



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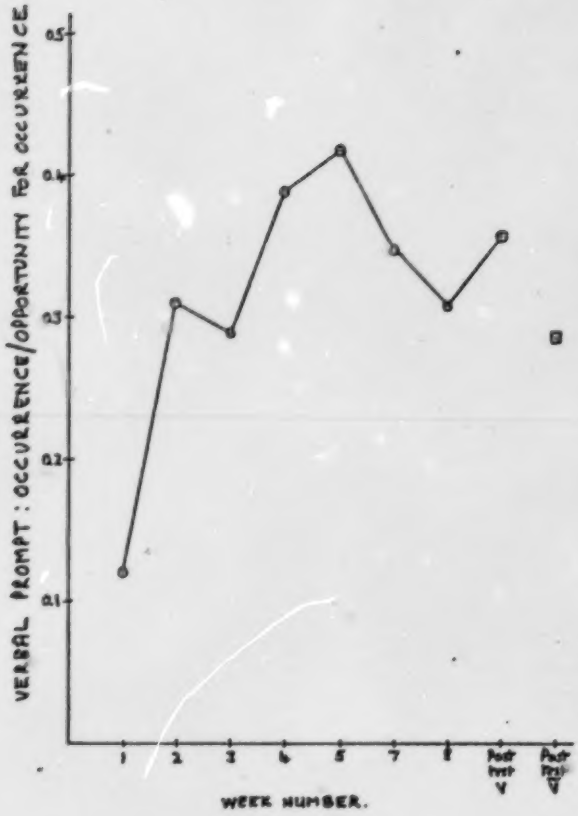


Figure 9.

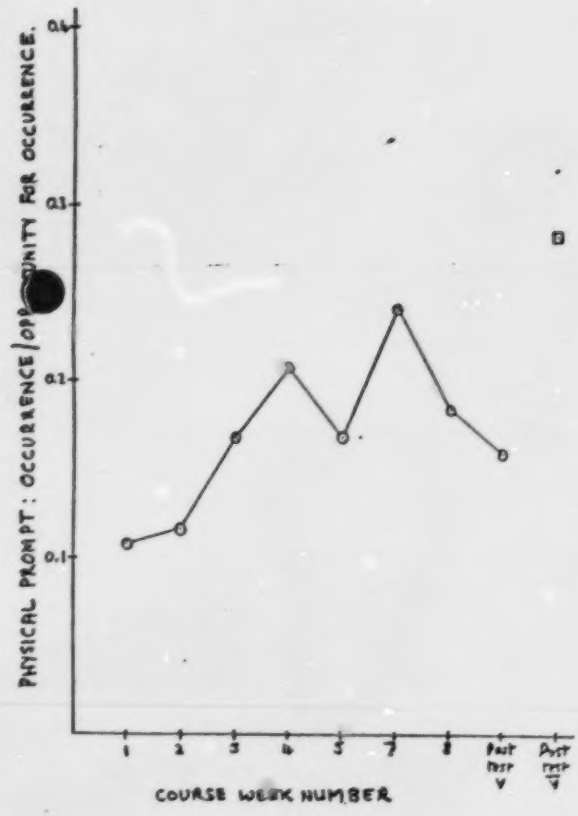


Figure 10.

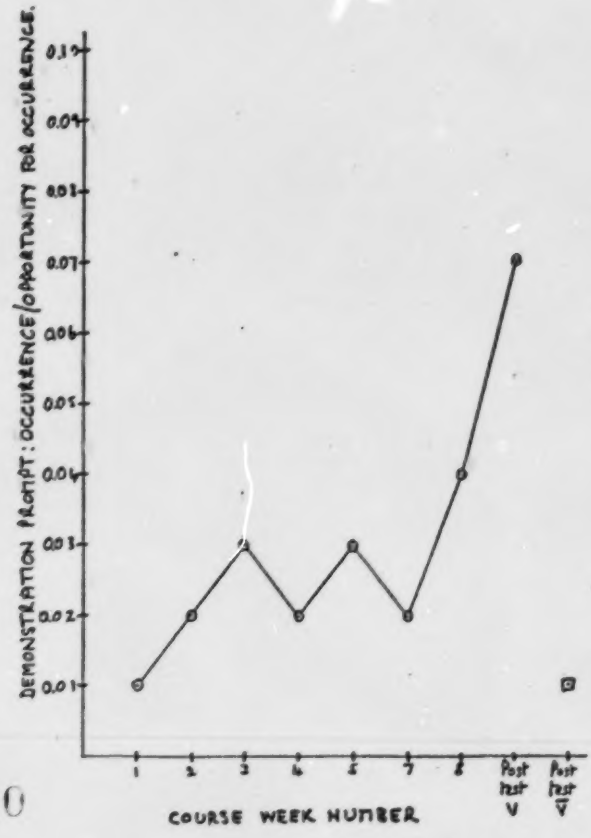


Figure 11.

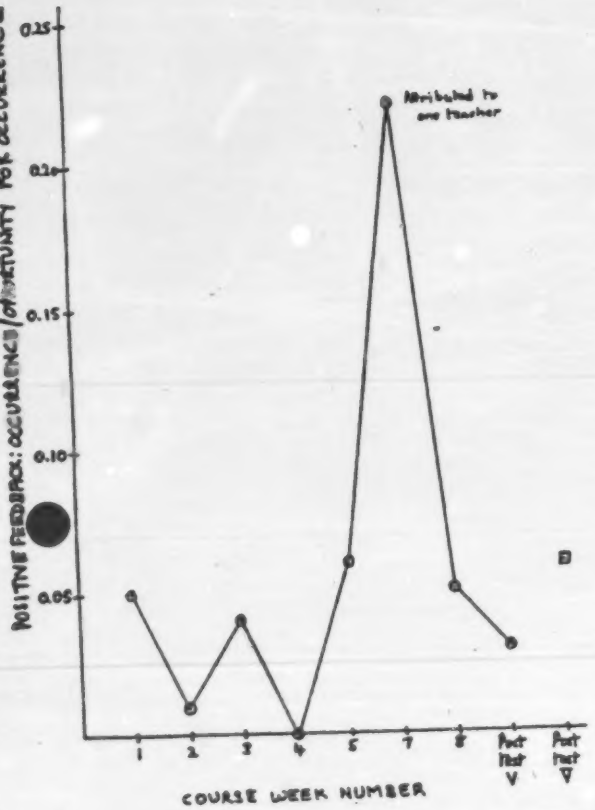
it is variable. There is therfore no clear influence of the course on this category of behaviour but there is a general decline in stimulation.

Gains Attention

It was emphasised through out the course that in order to correctly reinforce, punish, or prompt a child the teacher must first gain his or her attention. We therefore predicted that the frequency of occurence of Gains Attention would increase from the beginning of the course and continue to increase over time. The results show a sharp increase in gains attention in weeks 2 and 3 (Figure 8). This increase was not maintained, but dropped off in the second half of the course, especially in group teaching situations. Our prediction of a continuous increase was not confirmed, although there were general changes in the direction expected by the Course.

Prompts

Although the use of prompts was formally presented in session five, all teachers had been instructed in their use early in the course. This early training in verbal and physical prompting and modelling was necessitated in the second session when teachers were given individual child programmes. From the second session to the end of the course, teachers received feedback on their programmes, part of which included feedback on the use of prompts. This would lead us to predict increases for all three prompt categories early in the course and sustained or increased usage for the course's duration. The results show (see figures 9, 10, 11) increases for verbal and physical prompts and modelling from week one to week two. Verbal and physical prompts continue with upward trends throughout the course , while modelling category remains stable around the second week rate until it increases again in the last two observations.



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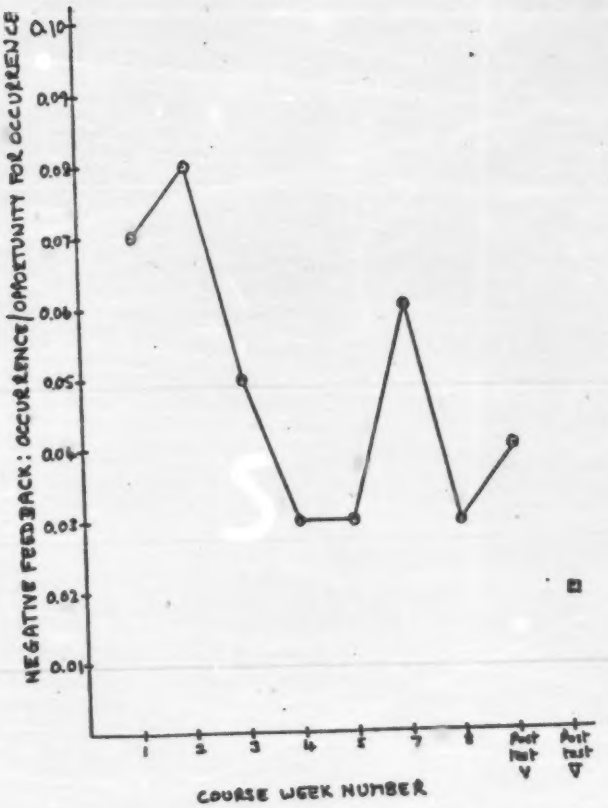

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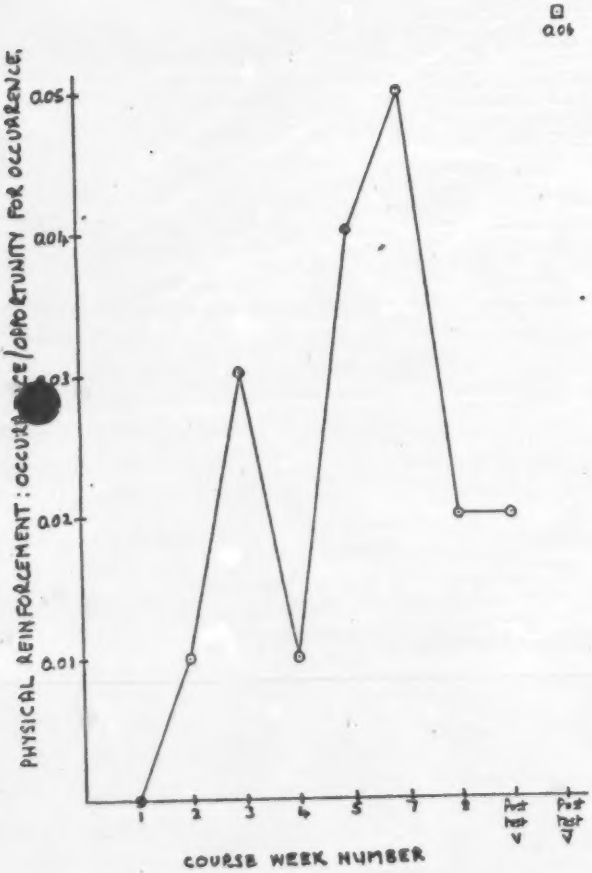

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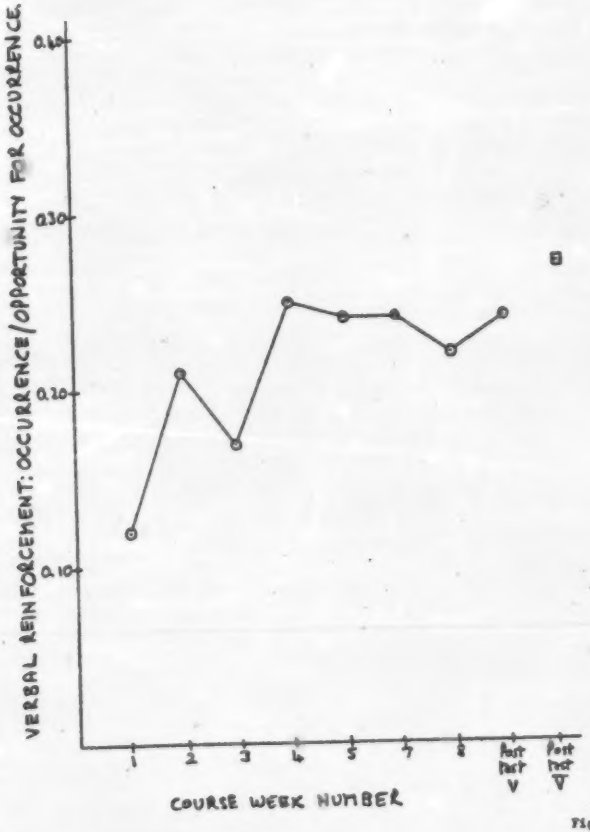
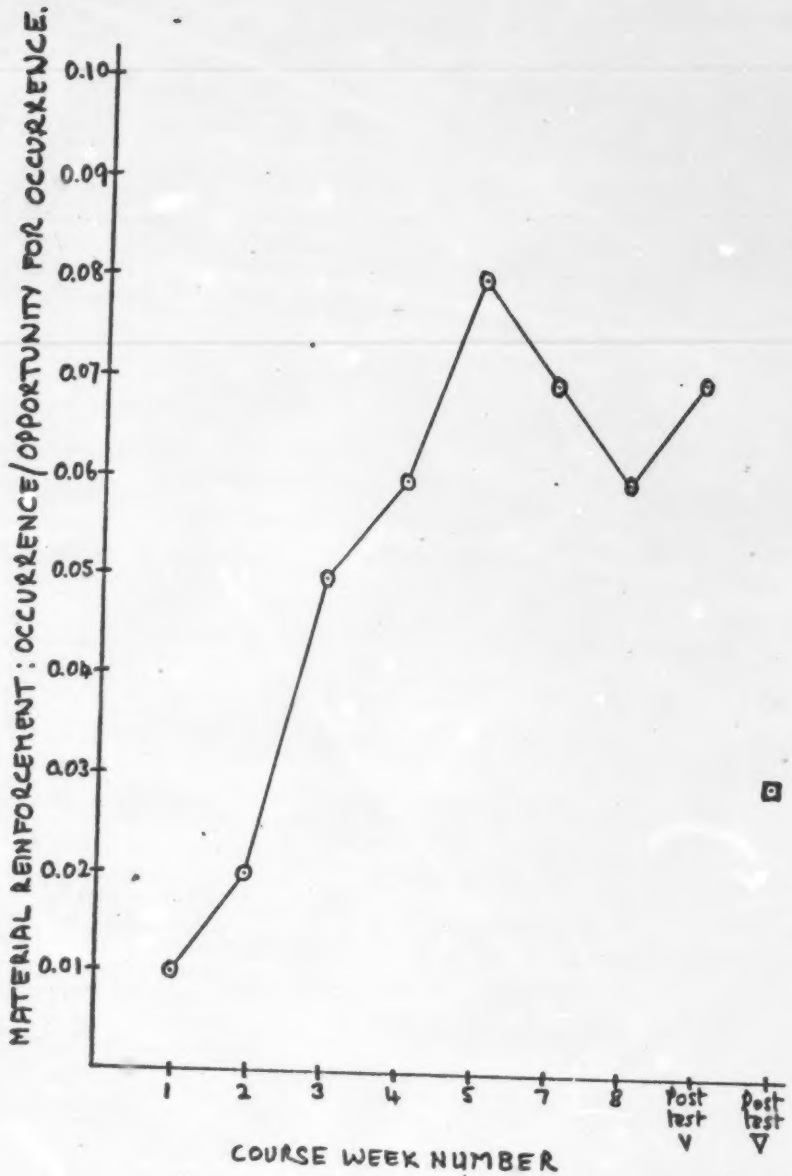


Figure 15.


MATERIAL REINFORCEMENT: OCCURRENCE/OPPORTUNITY FOR OCCURRENCE.
0.10
0.09
0.08
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0.04
0.03
0.02
0.01
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2
3
4
5
7
8
post test V
post test V
COURSE WEEK NUMBER

Figure 16.

Feedback (positive and negative)

In order to reliably code feedback, we define it as teacher responses which indicate to the child that he/she is making a correct response during the child's response. Positive feedback is desirable in that it increases the total amount of reinforcement of child behaviour, but it is undesirable because the teacher response is not contingent on the child completing a response. We did not predict the direction of changes in teacher behaviour on this measure, and we found (see Figure 12) the frequency of occurence to be variable over time with no general increasing or decreasing trend.

The emphasis of the entire programme was on positive rather than negative teaching techniques.

Negative feedback decreased sharply at week 3 (see Figure 13) the week in which declerative techniques were introduced (e.g. time out, response competition). This behaviour was variable, but remained at a lower level after week 3, especially in indidivudal teaching situations. Throughout the course teachers used negative feedback on average of 4 times more frequently in group than in individual teaching situations.

Reinforcement

In session two positive reinforcement procedures were introduced. Tutors emphasised the different types of reinforcers, including material, physical and verbal reinforcers. Teachers were then taught selection and correct usage of reinforcers. In addition the individual programmes had reinforcement discussed as a component part. Physical reinforcement (see Figure 14) increased in the second observation, continuing its climb through the third observation. The next four observations show variable performance although it remains at or above observation two. The post test shows this category at a moderate rate of occurrence. Verbal reinforcement (see figure 15) shows a sharp increase in week two, declining slightly in week three, then rising to a high level during week four and remaining at that level for the duration of the course. Material reinforcement (see Figure 16) shows

a steady rise until the middle of the course, from which time it remains relatively stable at this high level. During the ninth teaching session fading out reinforcement on individual programmes was taught, hence a decrease in the rate of reinforcement in work with individuals would be predicted. All three reinforcement categories declined during the ninth observation for individual work. The predictions made from the Course are born out by the data from recording of classroom use of reinforcement.

Time-Out

Punishment techniques were discussed in the third lecture. Teachers were encouraged to use reward training for competing responses and time-out rather than verbal and physical punishment training. We therefore predicted a small drop in the occurrence of verbal and physical control. The results show no change in the occurrence of Verbal Control over time (Figure 17). We did find a drop in the frequency of Physical Control at week 2 (when reward training was introduced) and week 3 (figure 18). After week 3 the frequency then fluctuated and remained well below the rate at week one.

The frequency of time out did not increase immediately/at week 3 (Figure 19) but did increase at week 4 and at the end of the course. This change may be á result of specific training in discussion groups and by participants in classrooms rather than due to the lecture. The post test frequency for the Not Visited group is half that of the Visited group.

Response competition, (reward training for competing response), did not occur in classrooms until it was introduced in the lecture on Week 3 (Figure 20). Its rate of occurence then fluctuated and remained low until it was discussed again in lecture 9. At that time the frequency increased dramatically in the Visited groups. Frequency was 13 times lower in the Not Visited group. This indicates that an interaction between the lectures and visits may be responsible for this change.

Summary of Findings on the Direct Effects of the Course on Observed Behaviour

Overall indices of change in Course Related behaviour show a general increase during the Course which can not be explained by teachers working more with individual children. We can conclude that teachers changed their way of working in classrooms as a result of the course in both individual and group teaching.

The specific hypotheses about effects of the course on practice in the classrooms are born out in several instances. Teachers worked increasingly with individuals than with groups. The amount of stimulation declined overall, but not very clearly. Again the hypotheses that teachers would try to gain the attention of the child increasingly was born out only at a general level. Prompts show clear increases, and modelling increases overall. Feedback was not specifically discussed and performance on this variable was fluctuating. However the ratio of use of positive and negative techniques was affected in the direction predicted. Similarly the frequency of use of specific reinforcement procedures behaved as expected. Findings in the use of time-out and related procedures raise the question of the extent to which the course plus the visits or the visits alone was making an impact on behaviour. In these instances there is reasonable evidence to suggest that the visits and advice given on visits was primarily effective rather than the course. The similarity of scores of Visited and Not Visited teachers on post test in the bulk of variables suggests that the course can be 'credited' with inducing change in both groups.

(b) Child Behaviour Time Sample Two of the categories used, Exploratory and Disruptive, did not reach satisfactory levels of reliability and were consequently dropped from the analyses. The other data from the Child Behaviour Time Sample show how child behaviour varied while their teachers participated in the course. Most child behaviour was coded in the

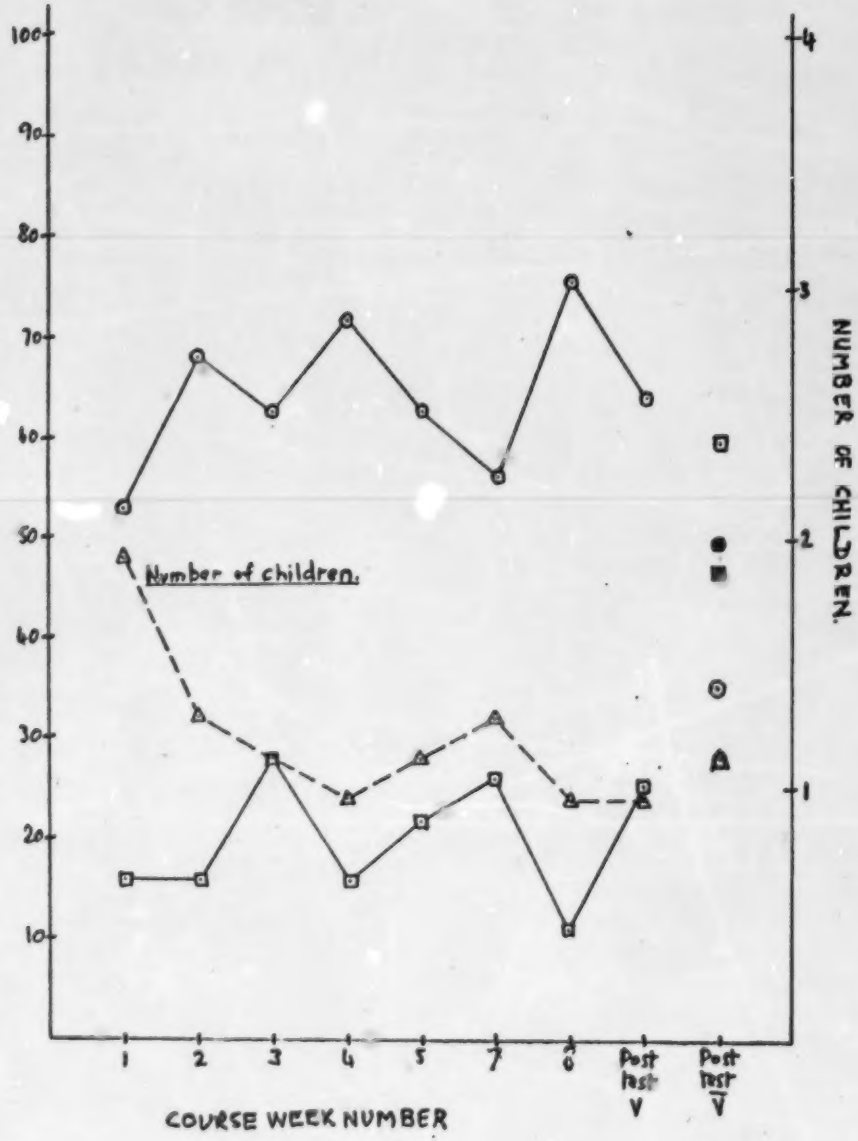

Figure 21

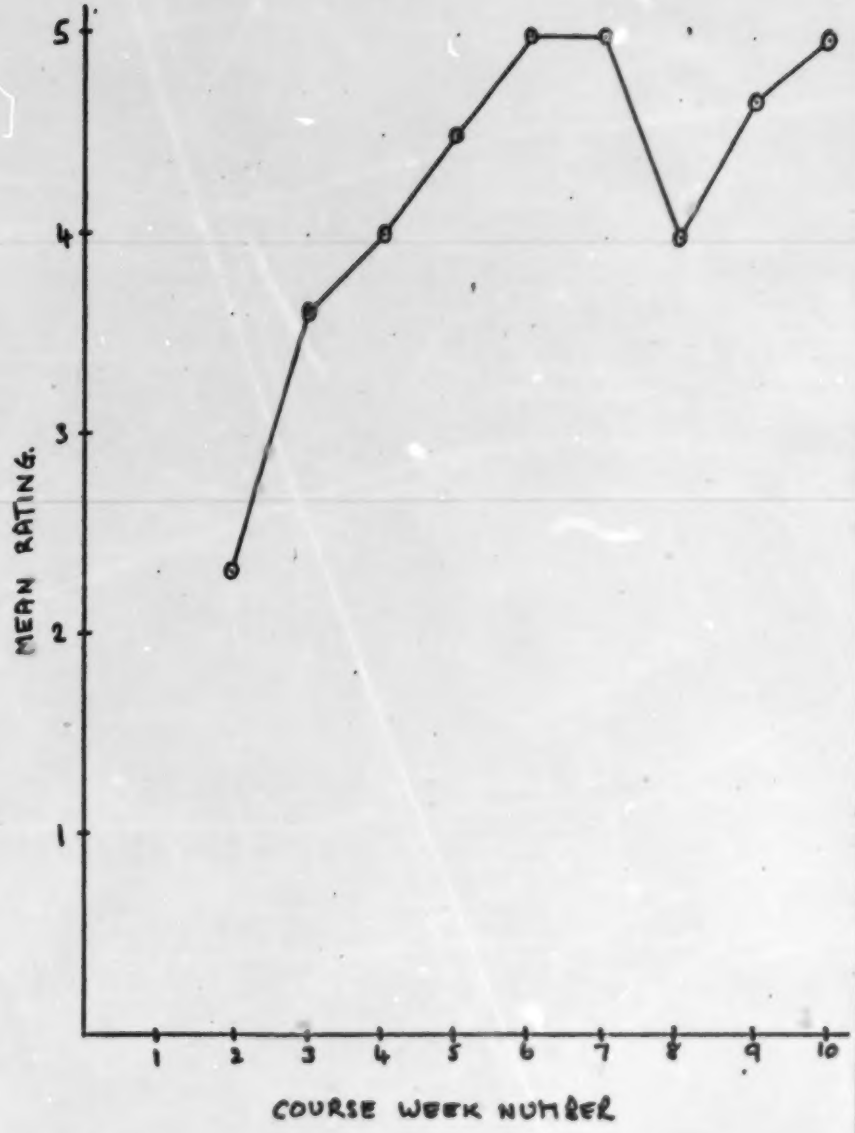

Figure 22

two categories of most interest to us, on-task and passive. Both behaviours fluctuated in rate over the course, with no clear trend over time. For children observed working with the teachers in the course, On Task behaviour ranged from 53 percent to 76 per cent and Passive behaviour ranged from 11 per cent to 28 per cent (See Figure 21). For Not Visited teachers, the mean figures were 37 percent and 60 per cent respectively. The differences between groups in Passive behaviour were significant ($t(12) = 2.02$; $p < 0.05$), and in On Task behaviour approached significance ($t(12) = 1.55$; $p < .10$). However the two hospital schools were in the Not Visited group, with these two schools removed there were no significant differences ($t(10) = 1.36$ for Passive, 0.868 for On Task). Visiting tutors felt that the hospital children were particularly passive compared with community housed children regardless of the approach of the teachers.

Among children working with teaching assistants in the observed teachers' classrooms, On Task behaviour ranged from 38 per cent to 64 per cent except one observation of 7 per cent, and no trend over time was evident. Passive behaviour ranged from 24 per cent to 84 per cent with no trend evident. For unsupervised children, in observed classrooms On Task behaviour ranged from 2 per cent to 15 per cent with a moderate increase over time. Passive behaviour ranged from 55 per cent to 79 per cent with no trend. Behaviours of the Not Visited group children were not significantly different although generally more passive.

A notable feature of the child behaviour data is that the general superiority of the children in the Visited group on Passive and On Task behaviour does not develop over time, but rather is evident from the first observation. In view of the similarity of Visited and Not Visited teacher behaviors observed at post test, this early difference in child behaviour is suprising. One possible explanation would be that teachers who knew that they would be continually visited, responded to the Participant Observers differently from teachers who were only observed at post test. Passive and On Task behaviour of children may be relatively easy to influence, especially

in children working with the observed teacher, hence the early differences in performance. This suggestion is not put forward with any degree of confidence since what we are discussing is whether the child is working on an educationally relevant task - the essence of the problem of teaching. It would seem unlikely that this is as easy to affect as would be implied by the suggestion. It is more likely that there were initial group differences which persisted.

(c) Tutor Assessment Forms. The ratings of the teacher of verbal mastery of the material follow a pattern similar to that of teacher behaviour observation measures. The data for five teachers is presented in Figure 22. These results show a steady rise in weeks 2 to 6. The ratings remained at a high level in weeks 6 to 7, drop to week 8 and then recover in weeks 9 and 10. It was not possible to relate these ratings to teacher performance.

Tutors felt that the ratings could not be made with confidence, and that halo effects were present. Examination of the data support these criticisms.

(d) Description of Teachers Programmes. Records were kept of programmes done by teachers through teachers own data collection, Self Report Forms, notes made in discussions and notes made on visits.

Table 3 shows the number of attendances for each teacher, the number of programmes successfully completed, with success being judged in terms of achievement of initial or revised target behaviour, the number of programmes where recordings kept at all by the teacher and the number where these records were considered adequate.

The Visited group attempted more programmes on average than the Not Visited group. The differences in mean reached only a low level of significance ($t = 1.97$, $df = 13$, $p < 0.10$). The difference in programmes completed was again in favour of the Visited groups, but non-significant ($t = 1.69$, $df = 13$, $p > 0.05$). Visited teachers again showed a higher average for programmes recorded. Again the difference between groups is not significant ($t = 1.50$, $df = 13$, $p > 0.05$).

Visited Group

No	Group	Attendance	No. of Progs. attempted	No. of Progs. Completed	No. of Progs. Recorded	No. of Progs. Adequately Recorded
01	A	10	5+	2	3	3
02	B	8	4	1	3	0
03	A	9	2	1	1	1
04	C	9	4	3	2	1
05	C	9	6	4	3	2
06	C	9	2	1	1	1
07	C	10	12	8	4	2
	Mean	9.1	5.00	2.86	2.43	1.43

Not Visited Group

08	C	9	4	2	0	0
09	B	9	3*	2	3	3
10	B	7	1	0	1	0
11	A	9	2+	1	2	2
12	A	10	2	0	2	2
13	B	6	1	0	1	0
14	A	10	4+	3	2	2
15	B	9	2+	1	2	0
	Mean	8.6	2.38	1.12	1.62	1.12

* All with one child

+ Stages 1 and 2 of the same programmes for one child.

Includes 3 with one child and 2 with each of 3 other children.

TABLE 3. Teacher programmes completed on Course.

The recording of programmes was , in general, poor. Only 46 per cent of programmes attempted by the Visited group were recorded, 68 per cent in the Not Visited group. This data probably reflect the fact that teachers found difficulty with recording and tended therefore to record a minimum of programmes. The apparent better recording by the Not Visited may reflect a greater perceived need to record because, not being visited, they felt the need to record for communication purposes. However, it seems more likely that the difference simply reflects the fact that more programmes were attempted by the Visited group.

The overall trend in the data in table 3 suggests that the Visited group may have participated more actively in the course, possibly as a result of added incentive from visiting.

The type of programmes attempted by teachers was a part function of the teaching needs of the course. Initially teachers were encouraged to attempt programmes which would provide them with examples of successful use of techniques. This tended to bias the programme content toward constrained discrimination tasks. Of the 54 programmes attempted 42 progressed far enough to be counted as reasonable attempts at programmes. The other 12 programmes were, in general, inappropriately selected in the first place and abandoned within one week. The 42 programmes include two head control programmes, three programmes concerned with feeding, two of which were concerned with food fads and one with independent drinking, one concerned with dressing and one with toiletting. Eight programmes involved elimination of self-injurious or aggressive behavour through the development of competing behaviour or the differential reinforcement of other behaviour. These programmes included elimination of self-induced vomiting, ear banging, thumb biting and biting others and disruptive behaviour. One programme modified unacceptable demonstrations of affection, a 'bear hug'! One programme rewarded holding of objects, two reach and grasp, three programmes taught children to squeeze squeaky toys, one to shake a rattle and one to turn the handle on a music box. Four children were taught to

complete form boards. Five programmes involved other visuo motor discrimination tasks. One programme taught block building. One child was involved in an object permanence programme followed by a searchbehaviour programme. One programme taught a child to blow a reed horn, one to copy forms. One child was involved in an eye contact programme, a second in a verbal imitation programme and two children in manual communication programmes one of which resulted in the child learning three signs.

(iii) Post-Course Measures

Thirteen of the fifteen teachers returned the evaluation forms. The missing forms were from the Not Visited group.

(a) Rating of Presentation and Discussion. This rating form was also completed after five sessions. Data from both mid and post course reports will be treated together. Presentation and Discussion will be dealt with separately (see Table 4)

INSERT TABLE 4 ABOUT HERE

All teachers rated the Presentation in the top or second ratings for both Relevance and Interest except for one teacher two rated Interest on three for the final ratings. There is a decrease in Interest signified by a fall in ratings from mid to post ratings,(mid,rating1,11; rating 2,7; post course, rating 1,7; rating 2,3. This may be an habituation effect or it may reflect the switch from discussion of relatively novel techniques during Sessions 1 to 5 to discussion of content in Sessions 6 to 10. In both mid and post course evaluations the majority of teachers rated Amount Learned with top ratings. Again there is some evidence of a fall from mid to post coures ($\bar{x}$ = 1.3, $\bar{x}$ post course = 1.6). Subject matter was consistently rated toward the 'easy' end of the scale. It is not possible to say if this result should be seen as a criticism, the course content being 'too easy' or reflecting a positive judgement on the course.

PRESENTATION

		1	2	3	4	5	No Response
Relevance	Good	10(9)	3(1)	0(0)	0(1)	0(0)	0(1)
Interest	Good	7(11)	5(1)	1(0)	0(0)	0(0)	0(0)
Amount learned	A lot	8(9)	1(2)	4(1)	0(0)	0(0)	0(0)
Subject matter	Easy	3(2)	4(5)	5(5)	1(0)	0(0)	0(0)
Organisation	Good	2(5)	8(2)	2(4)	0(0)	0(1)	1(0)
Delivery	Good	6(5)	2(6)	4(1)	0(0)	0(0)	1(0)
Usefulness of video	Good	10(7)	2(4)	1(1)	0(0)	0(0)	0(0)
Length	Long	0(0)	2(4)	8(3)	2(2)	1(2)	0(1)

DISCUSSION

Relevance	Good	12(7)	1(5)	0(0)	0(0)	0(0)	0(0)
Interest	Good	7(8)	6(3)	0(1)	0(0)	0(0)	0(0)
Organisation	Good	6(8)	3(3)	4(1)	0(0)	0(0)	0(0)
Length	Long	0(2)	3(5)	4(1)	2(0)	4(4)	0(0)

Table 4. Ratings of Presentation and Discussion on Mid and Post Course Evaluation. The table shows the frequency with which teachers used on different ratings on Post Course evaluation and Mid Course evaluation in brackets.

The average rating of Organisation changed very little from Mid to Post Course. There was a convergence on rating 2 from Mid to Post Course. Similarly the average rating for Delivery changes little with an average between Ratings 1 and 2. There was an improvement in Rating for Use of Video from Mid to Post Course. The majority of teachers rated Use of Video on rating 1 at both Mid and Post Course evaluations. Interpretation of rating of Length of the Course is difficult. There were wide disagreements but on average teachers appear to rate length at rating 3 which might be seen as an acceptable length.

Overall, presentations appear to have been well received especially in terms of relevance, interest, amount learned and usefulness of video.

The Relevance of Discussions appeared to improve from Mid to Post Course. Again most teachers rated both Relevance and Interest at ratings 1 or 2. Organisation was rated high but there is the suggestion that teachers rated organisation less highly in the second half of the Course (Mid $\bar{x}$ = 1.4, Post Course $\bar{x}$ = 1.8). There were sharp disagreements on length. At Mid Course two teachers rated length at rating 1, long, four at rating 5, short. The position had changed little by Post Course. This factor appears to need further exploration.

The results described in this section need to be interpreted with caution. Three teachers failed to complete the Mid Course evaluation, two failed to complete the Post Course evaluation. Since the rating sheets were completed confidentially and were consequently unsigned there is no way of knowing whether the same teachers were involved in each case. If different teachers with different views were involved in Mid and Post Course this factor alone could account for differences between Mid and Post Course patterns of rating.

As noted in the Method section Post Course evluations were returned by post to the tutors. Consequently the present rating sheet was attached to Ratings of Visits for the Visited group. This allowed us to isolate the Visited group teachers without identifying them by name. Since all seven Visited teachers returned the rating sheets there is no possibly of misclassification.

Differences between Visited and Not Visited groups emerge in the Post Course evaluation. Two indices were constructed to aid comparison, the first by combining scores on Relevance, Interest and Amount Learned (Value Index), of the second by combining Organisation, Delivery and the use of Video (Organisation Index). Mean score for the Visited group on the Value Index was 3.43 for the Non Visited 5.67 ($t = 3.07$, $df=11$ $p<0.02$). This result indicates that the Not Visited group considered the Presentations less valuable than did the Visited group. The Visited group were also more favourable in their ratings on the Organisation Index (4.86 as opposed to 5.83) for the Not Visited group). This difference did not reach significance ($t=1.24$, $df=11$, $p> 0.05$).

The difference observed between Visited and Not Visited teachers on the Index of Value for Discussions (here made up from Relevance and Interest scores) was not significant ($\bar{x}$ Visited = 2.62, $\bar{x}$ Not Visited 2.67 $t=0.63$, $df=11$, $p>0.05$).

Teachers were asked for additional comments on the Post Course completion of the sheets. Thirteen teachers responded. Several teachers welcomed the course or liked the practical nature of the course and visits. Two teachers suggested that there should be five complete days at weekly or fortnightly intervals to allow discussion over lunch. Two suggested morning rather than afternoon sessions. One teacher suggested a longer course. Two teachers suggested a similar course for assistants or for all members of ESN(S) school staff. Three teachers suggested the need for follow-up courses. Two Not Visited teachers felt that they would have benefited from at least one visit. Another would have liked feedback on the use of reward. One visited teacher felt that she would have liked more feedback from visits. One teacher suggested that visits to other Centres to see techniques demonstrated would have been useful. Pre-distribution of reading materials was suggested by two teachers. One teacher felt that she would benefit from discussion of assessment, another on what to use as competing behaviour. One teacher found the use of the term behaviour confusing, another found that methods of setting targets and

recording were 'most helpful',

(b) Rating of Visits. All the Visited group returned their rating sheets. In general ratings were positive. Four of the seven teachers felt that visits were essential for the success of the main programmes established in the Course sessions, the other three felt that visits were helpful but not essential. Four of the seven teachers felt that visits were essential for practical guidance on techniques, the other three felt that visits were helpful but not essential. Three teachers felt that the visits were essential for the attainment of all goals of all programmes undertaken, three felt that they were helfpul but not essential. One teacher checked both the 'essential' and 'helpful' categories. Four teachers felt visits were essential for selection of techniques, two helpful and one felt that on this aspect she could have proceeded alone. Three teachers found the visits helpful in classroom organisation, four that they could have proceeded alone.

Four teachers reported that visits were never disruptive but three felt that they were sometimes disruptive. Only two teachers reported that they always liked the style of feedback during visits, the other five that they sometimes liked the style. This aspect of the course clearly needs further investigation.

The final question, concerned with the 'effect of the attention focussed on (the) classroom as a result of the visits' was interpreted in a variety of ways. Two teachers did not respond, two made responses which suggested that effects were positive, two no effect and one clear adverse effects.

Most teachers rated some aspects of the visits highly and not others. High rated aspects differed from teacher to teacher suggesting that individuals derived different benefits from the visits. In general ratings were high with the exception of ratings on classroom organisation. The fact that this aspect was rated lower reflects the emphasis of visits on other aspects of the course (see also below). Low ratings here also suggest that teachers were not simply giving blanket ratings but were considering the questions asked.

(c) Teachers Report of Changes as a Result of the Course. Teachers were asked to report ways in which their teaching had been affected by the course. Eleven of the 13 replies indicated that teachers had introduced new ways of teaching skills or tasks. The same number reported using new ways of getting rid of problem behaviour. In each case the two other teachers did not answer the question. Six teachers, all in the Visited group, reported use of new curriculum content. Five teachers, four in the Visited group, said that they were intending to use new curriculum content in the future. Rather suprisingly given the fact that organisational aspects of teaching had not been stressed in the course, nine teachers reported that they had made or were making changes in the organisation of the classroom. Another teacher said that she would make changes if she could and another that the course had led her to 'look more carefully at classroom organisation'. Changes mentioned included the introduction of a time-table of activities (following a specific suggestion), re-arranging the day, or ensuring individual sessions, and re-arranging the classroom to promote maximum stimulation for the children.

All teachers reported having read some of the APT material. Eight said they had found it useful, two said it needed time to assimilate, two said it would be useful for revision, one did not response to the question of value. Use of other materials was mentioned by six teaches. These included the programme materials and charts including the Gunzburg PPAC. All six teachers mentioned using the materials with teaching assistants and other helpers.

5. Discussion

The results indicate that a practically -oriented inservice teacher training course can have significant effects on the teacher's classroom behaviour as assessed by independent observers. This effect has not been demonstrated in the previous training literature, and has been widely questioned by researchers. The data included measures of specific course-related behaviours, which permitted the behaviour to be related to the introduction of the topic and other events in the course. The results indicated that some behaviours changed significantly, while others changed little on not at all. Most of the desired change in the skills observed occured in the first half of the course, when the topics were skill-oriented. During later content oriented sessions, few checklist skills increased in rate, and several actually regressed. This finding is not suprising, although we might have hoped for gains to continue.

The project also examined the effects of visits by participant observers on classroom teaching behaviour. The utility of the combined consultant-researcher role was supported strongly by the positive opinion of the visited teachers, and some suggestive differences in child behaviour were observed. However, the differences in course-related teacher behaviour were minimal. In view of the expense of using participant observers for training, the differences were rather disappointing. However it should be incumbent upon inservice trainers to demonstrate that their courses have some effects on teacher behaviour, and a participant observer model allows observers to provide additional training while validating change.

The overall approach was welcomed by the teachers involved. They commented favourably on the practical emphasis of the course and rated both presentations and discussions highly. The use of videotaped examples was considered particularly valuable. It seems reasonable to conclude that this format or a variant on it of the types of suggested by a number of teachers is likely to be of greater value than lecture series.

Several of the measures used in the study failed to produce meaningful results. The Pre Course Measures did not relate to performance but may nonetheless be of use in larger studies. Of the measures taken during the course the Teacher Observation Checklist produced the most informative pattern of data. Neither the Child Behaviour Time Sample nor the Tutor Assessment Forms revealed interpretable patterns. Post Course ratings were informative but probably showed more favourable ratings than those which would have been made in different cirucmstances. Nonetheless these ratings and the accompanying comments do provide evidence on the relative values of different segments of the Course. It was suprising, for example , that presentations were rated almost as highly as discussions. This data suggests that both elements are felt to be of value or to be necessary. This study is not unique in finding difficulty.in getting teachers to reliably record data. Data was well recorded by a number of teachers and felt to be of value in certain cirucmstances, for example where antecedent and consequent events were in question. However we would suggest that even perfect recording of individual sessions would not have yielded the same information as the Teacher Observation checklist. What that method explored was the sought-after <u>generalised</u> change in teacher behaviour as a result of the course. This could not have been revealed by self-report methods.

The study shows that the classroom behaviour of teachers can be changed as a result of a ten session practically-oriented workshop course. Specific changes in behaviour could be related to specific elements of the Course in a number of instances. Teachers welcomed the course and rated both Presentations and Discussion components highly. The need to adequately evaluate in-service training courses is stressed.

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Figure 1. Ratio of Course Related Behaviour to Opportunity for Occurrence of Course Related Behaviour for the Visited Group ($V, \odot$) and the Not Visited Group ($\overline{V}, \boxdot$).

Figure 2. Percent of time on Individual versus Group work for the Visited Group ($V, \circlearrowright$) over the weeks of the course and for the Not Visited Group on Post-test ($\overline{V}, \boxdot$).

Figure 3. Occurrence of Course Related Behaviour as a ratio of Opportunity for Occurrence on successive visits irrespective of timing of visits. Visited group only.

Figure 4. Ratio of Occurrence of Course Related Behaviour to Opportunity. Average Z scores for the Visited Group.

Figure 5. Ratio of Course Related Behaviours to Opportunity for Occurrence plotted over the ten weeks of the course for six teachers in the Visited Group.

Figure 6. Average number of children worked with by teachers in the Visited ($\odot$) and Not-Visited ($\bullet$) groups in the Course Week indicated.

Figure 7. Occurrence over Opportunity for Occurrence of Stimulation against week of course when visit made for the Visited group ($\odot$) and the Not-Visited Group ($\boxdot$).

Figure 8. Occurrence over Opportunity for Occurrence of Gains Attention against week of course when visit made for the Visited Group ($\circlearrowright$) and the Not Visited Group ($\boxdot$).

Figure 9. Occurrence over Opportunity for Occurrence of Verbal Prompt against week of course when visit made for the Visited Group ($\odot$) and the Not-Visited group ($\boxdot$).

Figure 10. Occurrence over Opportunity for Occurrence of Physical Prompt against week of course when visit made for the Visited Group ($\circlearrowright$) and the Not-Visited Group($\boxdot$).

Figure 11. Occurrence over Opportunity for Occurrance of Demonstration Prompt against week of course when visit made for the Visited Group (⊙) and the Not Visited Group (⊡).

Figure 12. Occurrence over Opportunity for Occurrence of Positive Feedback against week of course when visit made for the Visited Group (⊙) and the Not Visited Group (⊡).

Figure 13. Occurrence over Opportunity for Occurrence of Negative Feedback against week of course when visit made for the Visited group (⊙) and the Not Visited group (⊡).

Figure 14. Occurrence over Opportunity for Occurrence of Physical Reinforcement against week of course when visit made for the Visited group (⊙) and the Not-Visited group (⊡).

Figure 15. Occurrence over Opportunity for Occurrence of Verbal Reinforcement against week of course when visit made for the Visited group (⊙) and the Not-Visited group (⊡).

Figure 16. Occurrence over Opportunity for Occurrence of Material Reinforcement against week of course when visit made for the Visited group (⊙) and the Not-Visited group (⊡).

Figure 17. Occurrence over Opportunity for Occurrence of Verbal Control against week of course when visit made for the Visited group (⊙) and the Not Visited group (⊡).

Figure 18. Occurrence over Opportunity for Occurrence of Physical Control against week of course when visit made for the Visited group (⊙) and the Not Visited group (⊡).

Figure 19. Occurrence over Opportunity for Occurrence of Time-Out against week of course when visit made for the Visited group (⊙) and the Not-Visited group (⊡).

Figure 20. Occurrence over Opportunity for Occurrence of Response Competition against week of course when visit made for the Visited group (⊙) and the Not Visited group (⊡).

Figure 21. On task behaviour (⊙—⊙ Visited, ⊙ Not Visited) and passive behaviour (⊡—⊡ Visited, ⊡ Not Visited) computed from the Child Behaviour Time Sample. Mean scores for the Not Visited group with Hospital Schools excluded are included in Post-test $\overline{V}$. Denotes on task behaviour, passive behaviour. Average number of children being worked with by the target teacher are also included, .

Figure 22. Mean rating by the tutors for each week of course for the Visited and Not Visitied groups together.